S. HRG. 100-460

LOWER DES PLAINES TRIBUTARIES WATERSHED PLAN

HEARING

BEFORE THE

SUBCOMMITTEE ON CONSERVATION AND FORESTRY

OF THE

COMMITTEE ON AGRICULTURE, NUTRITION, AND FORESTRY UNITED STATES SENATE

ONE HUNDREDTH CONGRESS

FIRST SESSION

ON

THE AUTHORIZATION AND PRIORITIES OF FLOOD PREVENTION MEASURES IN THE DES PLAINES TRIBUTARIES WATERSHED PLAN UNDER PUBLIC LAW 83-566

JUNE 17, 1987

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LOWER DES PLAINES TRIBUTARIES WATERSHED PLAN

WEDNESDAY, JUNE 17, 1987

U.S. SENATE,
SUBCOMMITTEE ON CONSERVATION AND FORESTRY OF THE
COMMITTEE ON AGRICULTURE, NUTRITION, AND FORESTRY,
Washington, DC.

The subcommittee met, pursuant to notice, at 10 a.m., in room 332, Russell Senate Office Building, Hon. Wyche Fowler, Jr. (chairman of the subcommittee) presiding.

Present or submitting a statement: Senators Fowler, Bond, and Simon.

Also present: Senator Dixon.

STATEMENT OF HON. WYCHE FOWLER, JR., A U.S. SENATOR FROM GEORGIA

Senator FOWLER. Let us start. We welcome all of you from Illinois. Senator Dixon is on his way. I will go ahead and make some opening remarks while we await Senator Dixon's opening testimony, then we would be delighted to hear from you.

My name is Wyche Fowler, and I am the new man from Georgia and the new chairman of the Subcommittee on Conservation and Forestry, which is also a new subcommittee of the Agriculture Committee, so this is the first hearing that we have had under our new subcommittee's jurisdiction.

I would like to thank all of our witnesses for taking the time to appear before this subcommittee today. I would especially like to thank Senator Dixon. I know that he has been very supportive of the Lower Des Plaines tributaries watershed plan, and the Senator's support for the project clearly indicates the importance of the project to the health and safety of the people of Illinois.

The issue before us today, in fact, appears to be not one of whether flood prevention measures are needed in the Lower Des Plaines tributaries watershed. There is no doubt but that they are. The issue, I believe, is rather one of priorities.

The Lower Des Plaines tributaries watershed plan has been prepared in accordance with Public Law 83-566, the Watershed Protection and Flood Prevention Act of 1954, often referred to as the Soil Conservation Service's Small Watershed Program. The Small Watershed Program was enacted to provide flood prevention and watershed protection primarily to rural areas, through technical and financial planning and construction assistance to local sponsors. In fiscal year 1987, this program received $134.8 million in

funding, which is approximately 22 percent of the total budget for the Soil Conservation Service.

As this subcommittee is painfully aware, soil erosion is one of the most critical resource problems facing this country today. Obviously, a program that constitutes nearly one-fourth of the total budget of the Soil Conservation Service should be dedicated in part to reducing the estimated 6.5 billion ton soil erosion rate that the United States faces each year.

Yet, by its sponsors own admission, the Lower Des Plaines project is a project whose principal purpose is urban flood prevention. Certainly the project is necessary. And I do commend the local sponsors of the plan for their degree of commitment to the project, as evidenced by the plan's 37.6 percent local cost share provision. But there are questions about the use of Soil Conservation Service funds, particularly in these days of budget constraints, for watershed projects which are principally urban in emphasis.

I hope, therefore, that in the testimony this morning that the subcommittee might explore the process by which the Lower Des Plaines watershed plan came to be designed as a Small Watershed Program project. By doing so, we may find that this plan is unusual in its degree of urban emphasis, and that the program is, indeed, still rural in emphasis. Conversely, we may find that this project points to a strong urban trend in the program. If the latter is the case, I would suggest to my colleagues that this may be an issue we will want to revisit in this subcommittee at a later date.

With that, I will conclude my opening remarks, and welcome the senior Senator from Illinois, Alan Dixon. We would be delighted, Senator Dixon, to hear from you.

[The prepared statement by Senator Fowler follows:]

Opening Statement by Chairman Fowler
Hearing of the Subcommittee on Conservation and Forestry
on the Lower Des Plaines Tributaries Watershed Plan
June 17, 1987

I would like to welcome you all to this Subcommittee's first hearing of the 100th Congress, to hear testimony on the Lower Des Plaines Tributaries Watershed plan. As the new Chairman of the Subcommittee, I am looking forward to this being the first of many productive and informative hearings that this Subcommittee will hold on issues affecting soil conservation and the Soil Conservation Service.

I would like to thank all of our witnesses for taking the time to appear before this subcommittee today. I would especially like to recognize and thank the distinguished senior Senator from Illinois, Senator Dixon, for taking time out of his busy schedule to be here this morning. I know that he has been very supportive of the Lower Des Plaines Tributaries Watershed plan, and the Senator's support for the project clearly indicates the importance of this project to the health and safety of the people of Illinois.

The issue before us today, in fact, appears to be not one of whether flood prevention measures are needed in the Lower Des Plaines Tributaries watershed. There is no doubt but that they are. The issue, I believe, is rather one of priorities.

The Lower Des Plaines Tributaries Watershed plan has been prepared in accordance with Public Law 83-566, the Watershed Protection and Flood Prevention Act of 1954, often referred to as the Soil Conservation Service's Small Watershed Program. The Small Watershed Program was enacted to provide flood prevention and watershed protection primarily to rural areas, through technical and financial planning and construction assistance to local sponsors. In FY1987, this program received $134.8 million in funding, which is approximately 22% of the total budget for the Soil Conservation Service.

As this Subcommittee is painfully aware, soil erosion is one of the most critical resource problems facing this country today. Obviously, a program that constitutes nearly one-fourth of the total budget of the Soil Conservation Service should be dedicated in part to reducing the estimated 6.5 billion ton soil erosion rate that this country faces each year.

Yet, by its sponsors own admission, the Lower Des Plaines project is a project whose principal purpose is urban flood prevention. Certainly the project is necessary. And I commend the local sponsors of the plan for their degree of

commitment to the project, as evidenced by the plan's 37.6% local cost share provision. But I am troubled by the use of Soil Conservation Service funds, particularly in these days of budget constraints, for watershed projects such as the Lower Des Plaines Tributaries which are principally urban in emphasis.

I hope, therefore, that the Subcommittee might explore today the process by which the Lower Des Plaines Watershed plan came to be designed as a Small Watershed Program project. By doing so, we may find that this plan is unusual in its degree of urban emphasis, and that the program is, indeed, still rural in emphasis. Conversely, we may find that this project points to a disquieting urban trend in the program. If the latter is the case, I would suggest to my colleagues that this may be an issue we will want to revisit in this Subcommittee at a later date.

With that, I will conclude my opening remarks, and welcome my colleague, the distinguished Senator from Illinois, Senator Dixon.

STATEMENT OF HON. ALAN J. DIXON, A U.S. SENATOR FROM ILLINOIS

Senator DIXON. I first would like to say, Mr. Chairman, I am very impressed by your new position as a distinguished chairman of a subcommittee of the Agriculture Committee, and I congratulate you upon your new assignment.

Senator FOWLER. Half the fun is getting there. Thank you, my friend. You will be granted an additional 5 minutes.

Senator DIXON. If we could have the money instead of the additional 5 minutes, we would appreciate that more. [Laughter.]

Mr. Chairman, thank you for taking the time to organize and preside over today's hearing on the Lower Des Plaines tributaries watershed plan. As a former member of the Senate Agriculture Committee, I know intimately how demanding the duties of this committee can be. At the same time, I am honored to be in attendance on the occasion of your first hearing as chairman of the Subcommittee on Conservation and Forestry.

The Lower Des Plaines tributaries watershed plan is a project that has been in the making for more than 15 years. Because of a series of large floods dating back to the 1960's, State and local officials formed a steering committee to look at the problem. Their solution, which has been approved by both the Soil Conservation Service and the Office of Management and Budget, is the project pending before this subcommittee.

The Lower Des Plaines tributaries watershed plan is a project that meets every test possible: One, it meets the current law and regulations under the Small Watershed Program; two, it has very good cost-benefit ratio. For every dollar spent on the program, $1.62 is received in benefits; and three, the State and local officials are putting up an additional 10 percent of the cost above the 25 percent required under the program.

Further, this project, if approved, would prevent more than $10 million in annual damage in an area that is bounded by Libertyville in the north, Willow Springs in the south, Oak Park in the east and Bloomingdale in the west. This dollar loss translates into saving 2,700 homes, 6,500 people, and 200 local businesses.

Last fall, Illinois experienced one of its worst floods, one which caused more than $35 million in property damage and displaced thousands of people within the watershed.

To highlight that fact, Mr. Chairman, I ask that the Chicago Tribune articles of October 1 and 2 be added to the hearing record.

Senator FOWLER. Without objection, so ordered.

[The material follows:]

Chicago Tribune
25¢ City and suburbs · Wednesday, October 1, 1986 · Sports Final

Parts of Cook disaster areas

By Katherine Siegenthaler and George Papajohn

With more rain predicted, the slowly rising Fox River put residents of Kane County on floodwatch Tuesday night, bracing for the same problems that have caused parts of the Chicago area to be declared disaster areas.

Flooding along the surging Des Plaines River in Lake County and northern Cook

● Cook County's neighbors get the blame. Sec. 2, pg. 3.
● School, transit schedules are sunk. Sec. 2, pg. 3.

County is so severe that Gov. James Thompson has declared both areas, as well as parts of McHenry County, state disaster areas.

On Monday Thompson declared Lake County a disaster area, and on Tuesday, after visiting several suburbs by boat, he extended the designation to parts of Cook County.

As high water from the Des Plaines River moved south, some residents living near the river in communities such as Schiller Park and River Grove began evacuating. Streets were flooding as far south as Maywood.

"I was born and raised here and this is the worst I've ever seen it," said River Grove Mayor Thomas Tarpey. He

Continued on Sec. 2, page 2

Flooding

Continued from Sec. 1, page 1

said the water is 5 feet deep in some areas.

The Fox River was reported to be nearly a foot over flood stage at Algonquin, in southern McHenry County, and some streets were awash in such Kane County communities as Carpentersville, East and West Dundee and South Elgin. Water was reported flowing in yards and open areas between Elgin and St. Charles.

William Diamond, director of the Kane County Emergency Services Disaster Agency, said he fears the Fox River could rise enough to spill over the dam at Algonquin and cause major flooding. Diamond's staff was distributing sandbags in threatened areas.

The most encouraging news for those living near the Fox River in Kane County was a weather forecast from the Central Weather Service calling for little additional rain before late Wednesday afternoon. This could allow enough time for the river to drop.

The forecast also offered hope to residents along the more southern reaches of the Des Plaines River who have not been afflicted with flooding as serious as those living further north along the river.

But the National Weather Service, which lifted its flash-flood warning Tuesday, cautioned that the rain might resume as early as Wednesday morning.

And Central Weather Service forecasters warned that when the rain does resume, it could begin in the southern part of the Chicago area and work its way north toward flood-soaked Lake County. They also predicted that the rain would continue and possibly become heavy on Thursday.

Parts of the Chicago area have been afflicted by almost daily rains since Sept. 10. Communities in Lake County have been deluged by up to 12 inches of rain, which not only has caused rivers and creeks to spill over their banks but has created vast pools in some low-lying areas.

September rainfall in the city itself, which has not been among the hardest-hit areas, measured 7.23 inches by 7 p.m. Tuesday at O'Hare International Airport, the official measuring station. Normal for the month is 3.35 inches, though the record is the 14.17 inches of 1961.

There has been so much rain, not only in the Chicago area but in Wisconsin and Michigan, that Lake Michigan has reached its all-time highest level, 581.48 feet above sea level, according to the water resources division of the Illinois Department of Transportation.

Neil Fulton, chief of the resource management bureau of the water resources division, said that before the rains came the lake level had been dropping after reaching a high of 581.2 feet above sea level in June.

The Metropolitan Sanitary District said that the Chicago River is only a few inches higher than normal in the downtown area, but its North branch is about 2 feet higher than normal.

MSD officials said that there is no danger of major flooding along any part of the river.

Nicholas Melas, MSD president, said Tuesday that flood-control projects such as Deep Tunnel are reducing the flood danger in many parts of Cook County.

In Chicago and most of its older bordering suburbs, sewer systems rebuilt over the last 20 years working in conjunction with the Deep Tunnel have so far been able to accommodate the heavy rainfall, Melas said.

Rising water levels on the Fox River and the Chain-O-Lakes in McHenry County were the reasons that Thompson included parts of that county in the disaster area designation.

Fox Lake, in Lake County, the largest of the Chain-O-Lakes, has risen nearly 4 feet since Friday, according to those living nearby. The north branch of the Fox River flows through Fox Lake, swings west into McHenry County and then south into Kane County.

Kane County officials said they feared that the Fox River would spill over the McHenry lock and dam and the Algonquin dam, both in McHenry County.

Thompson's disaster designation for Cook County included parts of Elk Grove, Maine, Northfield and Wheeling Townships.

An estimated 1,000 residents in such northern suburbs as Mt. Prospect, Prospect Heights and Des Plaines had been forced to leave their homes. In addition, more than 1,000 tons of sand had been used by residents and village workers seeking to hold back the flood.

Canoes were the most popular means of transportation in much of the area. They were being used for checking on neighbors and by those who waited just a little too long before deciding to leave their homes. More than one canoe was seen gliding down a street-turned-canal filled with a family, their suitcases and a television set.

But by Tuesday night, the Des Plaines River flood zone had moved well south of the disaster area designated by the governor. In Schiller Park about 4½ feet of floodwater had spilled over River Road beween Irving Park Road and Seymour Avenue.

Three six-unit apartment buildings were evacuated and a shelter for residents was opened in the Schiller Park Community Center, 2501 N. 25th Ave.

Though some residents along River Road in River Grove were leaving, others defiantly decided to remain.

"I'll stay until water comes out the front door," said Frank Faruggia, 33, a River Grove police officer who was using three pumps at his home in the 2500 block of River Road.

"I sent my children [ages 2 and 7 months] over to their grandmother's. My wife is helping me, but eventually I'll send her, too."

A neighbor, Carmen Fiandalo, 35, said she had packed suitcases for herself, her husband and their 6-year-old daughter, but added, "We're going to try to stick it out for as long as we can."

In Lake County, still the hardest hit in the Chicago area, officials warned that a determination to stay could be dangerous.

"If they insist on staying in their homes, they are doing it at their own risk," said Capt. Francis Winans, coordinator of the Lake County office of Emergency Services. "The state and county governments cannot be responsible."

The harest-hit area is around Gurnee, a community of about 9,000. About 1 square mile of the 7.9-square-mile town is under water. The community's municipal building is in the flood zone and police and fire departments are among those who had to evacuate.

The police department is working out of temporary quarters in Six Flags Great America, the giant amusement park, which is on higher ground. The fire department is working out of a church, also on higher ground.

Lake County officials, who last week predicted that the Des Plaines River would reach its peak Tuesday, conceded that they don't know when that might occur. They said continued rain made the earlier forecast inaccurate.

Robert Enstad, Karen M. Thomas, Joseph Sjostrom and Dan McCaughna contributed to this report.

Chicago Tribune
Sports Final
756 City and suburbs
Thursday, October 2, 1986

Danger flows south in flood

By Robert Enstad
and Karen M. Thomas

Des Plaines River floodwaters swept southward through Cook County toward Lemont Wednesday, blocking roads, forcing residents to flee and touching off a police search for a man reported drowned in the torrent.

It was the second report this week of a drowning in the flooding which has forced 2,700 Chicago area residents from their homes and caused between $30 million and $40 million in property damage.

Among those evacuated Wednesday were more than 300 residents of a suburban Des Plaines nursing home.

Charles Jones, director of the Illinois Emergency Services and Disaster Agency, called the flooding the worst he had seen in the state, in terms of its effect on residents and their property.

The Central Weather Service predicted drizzle early Thursday, but warned that showers could return late Thursday or early Friday. Heavy showers could resume Friday night, forecasters said.

• The politicians approach the mess carefully. Sec. 2, pg. 2

• The crop causes a ragweed ripple effect. Sec. 2, pg. 3

Experts said the flooding is caused by heavy rainfall in the last month, not only in Chicago but in Wisconsin and other states across the central United States.

As rain-swollen streams have emptied into one another across the Midwest, the danger of flooding spread. On Wednesday, it reached the Mississippi River area, which must ordinarily drain all that part of the country.

The U.S. Army Corps of Engineers said the flood threat on the Mississippi will force barge traffic to a halt for two weeks in the section of river that forms the border between Illinois and Iowa, despite this being the harvest season.

On the Des Plaines, witnesses told Schiller Park police Wednesday that an unidentified man disappeared while wading.

Continued on Sec. 2, page 2

Tribune photo by Michael Tran

An elderly woman is helped into an ambulance as Des Plaines River flooding forced the evacuation of 112 patients Wednesday from Holy Family Health Center in Des Plaines.

Tribune photo by Pat Jean

Adrift against the tide, Larry Swaller lays sandbags as the water swirls around him at River Road and Herrick Street in River Grove.

Flood

Continued from Sec. 1, page 1

chest-deep in the stream near the Lawrence Avenue bridge. The body was not found, police said.

Upstream in Libertyville, authorities continued to search for Victor Cruz, 20, of North Chicago, who was presumed drowned after his boat capsized in the flood on Monday.

Some officials blamed the flooding for the deaths of five other people—four who suffered heart attacks while pumping out their homes and one who was electrocuted when a live wire touched the water near him.

As the Des Plaines rose beyond flood stage at one western Cook County suburb after another Wednesday, Gov. James Thompson added six more Cook County townships to the roster of state disaster areas. Four other Cook County townships as well as Lake County and parts of McHenry County were declared state disaster areas earlier in the week.

But even as Thompson added Norwood Park, Leyden, River Forest, Proviso, Riverside and Lyons Townships to his disaster list, Jones disclosed that he had received reports of river spillover and some flooding in Lemont, still further south. Flooding also affected a small area of the Far Northwest Side of Chicago Wednesday, leading Mayor Harold Washington and a group of officials to conduct a late afternoon tour of the area.

Officials of the Federal Emergency Management Administration and the Small Business Administration were in the flood region Wednesday to determine whether they should recommend it as a federal disaster area. Such a move would enable homeowners suffering damage to apply for low-interest federal disaster loans.

Further west, the Fox River rose slowly throughout the day and was reported at nine-tenths of a foot over flood stage at the Algonquin Dam in south McHenry County.

The Fox was flowing almost with a break over the Algonquin Dam and the nearby McHenry Dam, witnesses said.

Kane County officials said they expect the Fox, swelled by runoff from Fox Lake, to crest by Friday. If it crests at a level much higher that it measured Wednesday, there could be serious flooding in several Fox River Valley communities, the officials said.

Patrick Mundinger, who lives in the Oak Ridge subdivision on the east bank of the river near St. Charles, said he has considered himself in a flood zone since Saturday morning.

"I was lying in bed and I heard this splashing outside the window," he said. "So I looked out, and there were all these carp swimming near the house."

Since then, the water has risen to within a few inches of the floorboards of his house, making it impossible for him to reach his home without wearing hip boots.

Kane County officials distributed sandbags to homeowners near the Fox River and had notified the Red Cross that there could be a need for emergency shelters, such as those set up in Lake and Cook Counties.

On Water Street in South Elgin, Delbert Jensen has placed a semicircle of sandbags around the front of his house on the west bank of the Fox. The river, which normally flows about 20 feet from his house, is lapping at the bags.

At O'Hare International Airport, the official Chicago measuring station, 7.12 inches of rain fell in September. On Wednesday, 0.55 inches was recorded, the National Weather Service said.

In Lake County, 15.91 inches fell in Antioch during September, while 12.42 inches were recorded at Harvard, in McHenry County, the weather service said.

In Lake County, the hardest-hit by the flooding, officials said conditions had changed little.

"We're holding our own, water levels are stable," said Sgt. Steve Townsend, a Lake County sheriff's police officer assigned to the county's Office of Emergency Services.

The Des Plaines River in Lake County measured 3 feet above flood level at the Illinois-Wisconsin state line, 6.2 feet above flood level at Gurnee and 5.7 feet above flood level at Libertyville. Those measurements were similar to those recorded Tuesday. The water in Gurnee Wednesday was 4 inches lower than what was recorded the day before, but the figures offered only some solace to residents whose homes remain sodden.

"It might not be getting any worse, but it isn't getting any better, either," said Jones. "Those who have been hardest-hit will have to wait a couple of weeks before the water goes down or evaporates."

What is needed, Jones said, is a couple of weeks of sunshine.

In sheer size, he said, the flooding that began last week does not compare with the severe floods that occur along the state's largest rivers, such as the Illinois or the Mississippi.

"But this area has not flooded seriously since 1960, and you have towns and people on either side of the river," he said. "It has a big impact on these people."

Jones said that a by-product of the flood has been a spate of false rumors. "We heard that there were beaver-sized rats coming out of sewers in Schiller Park," he said. "This is not true. We also heard that floodgates in Lake County were being opened to flood the people in Cook County. This isn't true, either."

As the flood rolled south, 301 patients were evacuated from the Holy Family Health Center, a long-term nursing home at 2580 Dempster St., Des Plaines, as water reached the doorsteps and poured into the basement. Patients were taken to other area nursing homes. Forest Hospital, in the suburb, was evacuated Monday.

Flooding also has forced the closing of Northwest Suburban Aid for the Retarded, a nonprofit organization at 1841 Busse Hwy., Des Plaines. A spokesman for the group said 4 feet of water in the building caused $750,000 damage to equipment and projects on which 110 handicapped persons were working.

With sandbags at a premium, So-Fresh Produce Co., 10601 Waveland Ave., Franklin Park, found a ready market for empty burlap potato sacks. The firm sold 4,000 of them to the Village of Schiller Park, which was filling them with sand for use in flood-fighting.

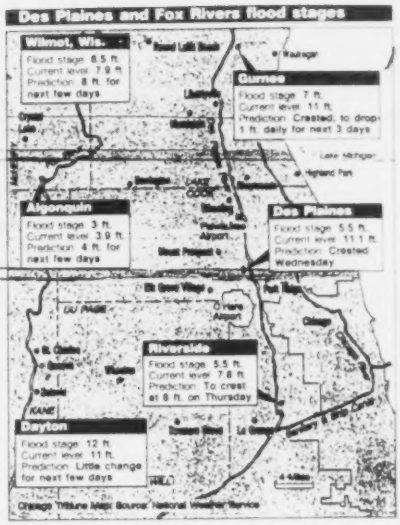
Further south in Riverside, officials said they feared that if the Des Plaines River continues to rise it will breach a two-block long levy on the river's east bank.

"If it breaks, we're just going to have to evacuate people," said Fire Chief Anthony Bednarz.

Illinois Bell Telephone Co. said that the flood knocked out phone service temporarily to 4,900 area customers, while 3,100 others complained of static on their lines. In most instances the problem was wet lines.

Katherine Seigenthaler, Joseph Sjostrom and Dan McCaughna contributed to this report.

Des Plaines and Fox Rivers flood stages


Wilmot, Wis.
Flood stage: 8.5 ft.
Current level: 7.9 ft.
Prediction: 8 ft. for next few days
Gurnee
Flood stage: 7 ft.
Current level: 11 ft.
Prediction: Crested; to drop 1 ft. daily for next 3 days
Algonquin
Flood stage: 3 ft.
Current level: 3.9 ft.
Prediction: 4 ft. for next few days
Des Plaines
Flood stage: 5.5 ft.
Current level: 11.1 ft.
Prediction: Crested Wednesday
Riverside
Flood stage: 5.5 ft.
Current level: 7.8 ft.
Prediction: To crest at 8 ft. on Thursday
Dayton
Flood stage: 12 ft.
Current level: 11 ft.
Prediction: Little change for next few days
Chicago Tribune Map; Source: National Weather Service

Senator DIXON. Thank you.

There are two final steps that the Senate must take to help make this project a reality: Today's hearing and the passage of a resolution by the full committee.

Finally, to help the subcommittee to understand this project, there are two distinguished Illinois officials present to give their testimony. They are, Mr. Donald R. Vonnahme, Director of Water Resources for the Illinois Department of Transportation; and the Honorable James Kirie of Elmwood Park, a commissioner for the Metropolitan Sanitary District of Greater Chicago.

These two men are accompanied by Neil Fulton, also of the State Division of Water Resources, and Mr. Ayoub Talhami, a project engineer with the Metropolitan Sanitary District of Greater Chicago.

Mr. Chairman, on behalf of the thousands of Illinoisans that will be spared from sandbagging their homes when the high water comes, I urge this committee to approve this project.

I thank you very much, Wyche, for the consideration given us in this opportunity to present our case this morning. I think my colleague, Senator Simon, has a statement as well.

I want to thank you, Mr. Chairman. There are a number of my good friends from Illinois here, and I have another committee meeting I'm supposed to be at in 15 minutes, so I must excuse myself, but want to say in advance that we appreciate your kind consideration of this request.

Senator FOWLER. Thank you. As an Atlantan, as well as a Georgian, with extraordinary flood plain difficulties I am very sympathetic to the needs. We will examine it very closely, and I thank you for your testimony, and I understand the necessity of being four places at once.

Senator DIXON. I thank you; and I just want to say, you really look like a chairman. I really feel good about this. [Laughter.]

Senator FOWLER. I did put on my first store-bought suit for this.

Senator DIXON. Thank you, Mr. Chairman.

Senator FOWLER. Senator Simon's statement will be made a part of the record.

Also, the statement of Charles Fox of the Environmental Policy Institute will be made a part of the record.

[The prepared statement of Senator Simon and the prepared statement of Mr. Fox, with attachments follow:]

Paul Simon

TESTIMONY OF

Senator Paul Simon

before the Subcommittee on Conservation and Forestry
of the Committee on Agriculture, Nutrition, and Forestry, U.S. Senate

June 17, 1987

I thank the distinguished Chairman and Members of the Committee for their time and consideration of the Lower Des Plaines Tributaries Watershed plan. I urge the Committee's prompt approval of the plan.

The preparation of the Lower Des Plaines Watershed project began in 1972 with the formation of an interagency committee which included representatives of the Soil and Conservation Service, the State of Illinois and the Metropolitan Sanitary District to formulate plans to reduce flooding in the Chicago urban area. As a point of interest to my colleagues on the Committee-- we are often told how slowly the wheels of our great government move; in 1972 I was serving the State of Illinois as Lt. Governor. I would say it is about time we move on this.

Later, other organizations, including the Corps of Engineers were added to this committee to broaden the participation in the planning process. The specific planning for this project was done under the guidance of a steering committee which included representatives of a broad range of concerned and impacted local interest.

This final plan has broad local support and 14 non-federal sponsors. State and local interests have already proceeded with implementation of their responsibilities under the plan.

Floodplain regulations are in effect throughout the watershed. Soil erosion control ordinances have been enacted by most of the municipalities in the watershed. Land has been acquired and a stream maintenance program is in the process of being implemented. In excess of $14 million of non-federal monies has already been spent. The problem is serious and a solution is at hand. Approval of this plan will allow the implementation of the solution and a major reduction of flooding along with the human suffering that accompanies it.

Concerns have been raised that this project is being considered as a Soil and Conservation project. Frankly, we have flood control projects in Illinois under both the Corps and SCS. The history of this project bears out the SCS involvement. Secondly, concerns have been raised as to the cost of the project and the extent to which it may "drain" from other projects. I have looked at the cost of other SCS authorized projects and do not find this project to be out of line with those authorization levels. Additionally, it is my understanding that the authorization level of this project will roughly maintain Illinois' share of the SCS program, consistent with past participation levels.

As a result of last fall's flood, $35 million in damages were incurred in the Des Plaines River Watershed. In the area to be benefited by the plan, now before this Committee, estimated average annual flood damages exceed $10 million. This figure, although large, does not accurately communicate the real impact of a major flood. Transportation arteries close. Families are displaced. Offices, stores and other workplaces shut their doors temporarily, resulting in income losses for both employers and employees. It is important to the people and to the economy of this area that further loss and damage be prevented. Approval of this plan can help.

Again, I thank the Members of the Committee for their time and consideration and I respectfully urge their prompt approval of this plan.

ENVIRONMENTAL POLICY INSTITUTE

STATEMENT OF CHARLES FOX
DIRECTOR, NATIONAL ESTUARIES PROJECT
ENVIRONMENTAL POLICY INSTITUTE

BEFORE THE SUBCOMMITTEE ON CONSERVATION AND FORESTRY,

COMMITTEE ON AGRICULTURE, NUTRITION AND FORESTRY
UNITED STATES SENATE

ON THE LOWER DES PLAINES TRIBUTARIES WATERSHED
PROJECT AND PUBLIC LAW 83-566

JUNE 17, 1987

Mr. Chairman, Members of the Subcommittee:

I am Charles Fox, Director of the National Estuaries Project for the Environmental Policy Institute (EPI). EPI is a nonprofit, public interest organization engaged in research, public education, litigation and advocacy. Our work is directed at energy, environmental and natural resource issues at local, national and international levels.

We greatly appreciate the opportunity to appear here today and share our views on the proposed Lower Des Plaines Tributaries Watershed Project and, more broadly, on Soil Conservation Service (SCS) administration of Public Law 83-566. With over 15 years experience in national water resources policy, we have become extremely familiar with P.L. 566. Four years ago, we launched our Chesapeake Bay Project. With our in-depth work in this area, we have come to appreciate the vital role of the SCS in comprehensive resource management. At the same time, however, we have also become intimately involved with wasteful P.L. 566

projects developed and implemented by the SCS which run directly counter to the protection and restoration of our nation's natural resources.

I. INTRODUCTION AND SUMMARY

We do not believe that this Subcommittee should authorize the Lower Des Plaines Tributaries Watershed Plan. Although we fully recognize that flood damage reduction is a serious and legitimate concern in metropolitan Chicago, we cannot support the use of extremely limited SCS funds for a very expensive, structural, urban flood control project. SCS activities, in our view, should be focused on national agricultural resource priorities like erosion control and water quality management. This project, with its price tag over $56 million, will be one of the largest "small" watershed projects in SCS history; yet, only 2% of the project's funds will go to soil erosion control.

SCS is the prime federal agency working to control erosion and tackle today's pressing agricultural water pollution problems. Like almost all federal agencies, its resources are limited and its programs are targeted to priority issues. In our view, however, too little attention has been paid to agricultural resource priorities, particularly severe water quality problems throughout the nation. In fact, the poorly-focused P.L. 566 program has not only diverted resources from other priority areas but, has actually exacerbated water quality problems in many regions.

In the Chesapeake Bay area, for example, the SCS has widely

promoted -- for decades -- traditional stream channelization to enhance agricultural production. These P.L. 566 projects have contributed to the loss of thousands of acres of wetlands, worsened surplus crop production, and have increased nutrient and sediment loadings to the Bay. Similar activities are still widely promoted in the Great Lakes region and along both Atlantic and Gulf Coasts.

As an ironic and revealing statement of SCS priorities, $4 million in federal funds is proposed for a single, massive ditching project called the Upper Chester River Project while only $1.14 million is directed at Chesapeake-specific water quality initiatives. This disparity, in our view, is indicative of the SCS's failure to focus its limited resources on important national priorities.

P.L. 566 should be brought in line with other SCS program priorities. The proposed Lower Des Plaines Tributaries Project is simply another, major example of SCS resources being diverted away from priority agricultural initiatives. We believe that Congress must specifically redirect P.L. 566 activities away from flood control and toward erosion and pollution control to complement emerging national priorities.

II. AGRICULTURAL WATER QUALITY PROBLEMS ARE SEVERE

Agricultural-related contamination of surface- and ground-waters has emerged as one of the most difficult and pervasive problems facing water quality managers. It has threatened public health, destroyed local waterways, and has been

linked to dramatic declines in coastal fishery resources.

Ground-water constitutes 96 percent of all of the available fresh water in the United States and is the primary source of drinking water for half of the general population and 95 percent of the rural population. The most commonly found or suspected ground-water pollutants are from agricultural sources, including nitrates (fertilizers), bacteria (animal wastes) and pesticides (herbicides and insecticides).[1]

A growing body of evidence suggests significant public health threats from agricultural-related sources. For example, a 1984 study by the U.S. Geological Survey with data from 124,000 wells found that 20% had nitrate levels believed to indicate agricultural contamination while 6% had levels exceeding Federal drinking water standards.

A 1986 study by the state of Iowa concluded that more than 20% of individual, rural resident wells had excessive nitrate pollution and traces of other, more dangerous farm chemicals. In California, a 1985 survey found 57 pesticides contaminating 2,887 wells.[2]

The Iowa Department of Natural Resources recently called ground-water protection "the state's number one environmental issue." Indeed, an Iowa state poll found that 86% of all Iowans now view ground-water contamination as a serious problem and, that 63% view agricultural chemicals as the cause.[3]

1 Feliciano, Donald. "Agricultural Effects on Groundwater Quality." Congressional Research Service, Library of Congress. Washington, D.C. October, 1986.
2 California Assembly Office of Research. "The Leaching Fields: A Nonpoint Threat to Ground Water." Sacramento, California. March, 1985.

Surface-water contamination from agriculture is well documented. A 1984 report by the Environmental Protection Agency (EPA) concluded that six out of ten EPA Regional Offices view nonpoint source pollution as "the principal remaining cause of water quality problems." Agriculture, the report said, is "the most pervasive nonpoint source in every Region."[4]

Farm runoff, principally excess phosphorus and nitrogen from fertilizers and animal wastes, is a major factor in the decline of the Chesapeake Bay. Fully half of these nutrients in the Chesapeake stem from agricultural nonpoint sources (the other half comes from sewage treatment plants). Like many water bodies in the country, these nutrients have contributed to nutrient "enrichment" or eutrophication. In the Chesapeake, nutrient inputs have fueled algae growth which, in turn, have contributed to exceptionally low dissolved oxygen levels. With this low dissolved oxygen, many Chesapeake finfish and shellfish have suffered dramatic declines. Both oyster and striped bass harvests, for example, have dropped about 10-fold in just the past decade.[5]

Oxygen depletion is also an increasing problem in the Gulf of Mexico and its estuaries. Although nutrient discharges from wastewater treatment plants and industrial sources are significant throughout the Gulf, nearly ten-times more nutrients

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3 Harrison, Ross. "Iowa's Next Major Environmental Thrust." Iowa Conservationist. Department of Natural Resources. Des Moines, Iowa. February, 1987.
4 U.S. EPA. "Report to Congress: Nonpoint Source Pollution in the U.S." Washington, D.C. January, 1984.
5 U.S. EPA. "Chesapeake Bay Program: A Framework for Action." Washington, D.C. December, 1983.

come into the region from upstream riverine sources. According to EPA, there has been a two-fold increase in nitrogen concentrations in the Mississippi River, probably the result of the runoff of fertilizers from intensified agricultural practices. EPA believes that this may be responsible for the severe oxygen depletion observed in bottom waters over a 3,000 square mile area off Louisiana and Texas.[6]

III. FEDERAL AGRICULTURAL RESOURCE INITIATIVES HAVE BEEN EXPANDED

The **Clean Water Act Amendments of 1987** (CWA) acknowledged the important role of nonpoint source pollution in the degradation of our nation's waters. The new CWA requires that each state develop and implement a nonpoint source pollution control strategy targeted to priority watersheds. These federal and state initiatives will involve the design and installation of so-called "best management practices" to reduce or eliminate the adverse water quality impacts of agricultural production.

The **Safe Drinking Water Act Amendments of 1986** (SDWA) included a new program aimed at wellhead protection. Under the law, various sources of ground-water pollution will be identified and control strategies will, ultimately, be developed and implemented. The new SDWA, for the first time, acknowledges the importance of "primary prevention" in the management of our nation's ground- and drinking waters. There is little question that agricultural sources of pollution will be a primary focus in the implementation of this new law.

The **Food Security Act of 1985** included a comprehensive new

6 U.S. EPA Region IV. "The Gulf Initiative." Atlanta, Georgia. January, 1987.

Conservation Title XII. The new programs, including sodbuster, conservation reserve, swampbuster, and conservation compliance will demand enormous new attention by the SCS. More generally, the new programs respond to pressing national needs and signify a dramatic federal effort to reduce soil erosion, protect wetlands, and, ultimately, enhance water quality.

IV. P.L. 566 PROJECTS ARE POORLY FOCUSED ON NATIONAL PRIORITIES

While some P.L. 566 projects do, in fact, enhance erosion control and water quality management, many do not. In some instances, the projects simply represent a "no net loss" for soil erosion or water quality. In other instances, however, P.L. 566 projects actually increase sedimentation, destroy valuable habitat and exacerbate water quality problems.

This is unacceptable in our view. We believe that all P.L. 566 projects should complement other federal policies and programs and actually improve our nation's natural resource base.

Chesapeake Bay Watershed

So that this Subcommittee can more fully appreciate the nature and magnitude of the P.L. 566 program, we would like to describe the results of some of our in-depth work in the Chesapeake Bay watershed.

As has been previously mentioned, the Chesapeake Bay is suffering from nutrient enrichment. Excessive phosphorus and nitrogen from agricultural and urban sources has led to a 250-fold increase in algae concentrations in some areas. This, in turn, has resulted in a 10-fold expansion in the areas

experiencing low or no dissolved oxygen in just the past decade. As a result, both federal and state governments have initiated a comprehensive -- and expensive -- program aimed at reducing nutrient inputs.

In the agricultural area, the states of Maryland, Pennsylvania and Virginia have initiated cost-shared programs for farmers to speed the implementation of "best management practices" (BMPs) to control sediment and nutrient runoff. In addition, all three states have expanded personnel to facilitate work with farmers. All total, the states have already appropriated in excess of $30 million in new cost-shared funds and hired an additional 60 agricultural staff.

At the federal level, in response to Congressional directives, the SCS has committed $1.14 million for 31 FTEs to facilitate the implementation of BMPs in targeted areas. In addition, base SCS programs continue to provide technical assistance to farmers and state employees.

However, the SCS has been actively involved -- and expending enormous resources -- in the development of P.L. 566 projects which would unquestionably undermine the Bay cleanup effort:

1) Upper Chester River Watershed Project

In 1982, the SCS published a then-final environmental impact statement (EIS) for a $7 million project involving about 300 miles of stream channelization on Maryland's Eastern Shore. The EIS contained virtually no examination of alternatives, exaggerated project benefits, and failed to present an adequate

evaluation of the project's environmental impacts. In 1984, in response to concerns of environmental and civic organizations, the SCS agreed to publish a new, more thorough EIS.

In October, 1986 the SCS issued a supplemental EIS for the project. Like before, the EIS was mostly a justification of the proposed plan and not an unbiased evaluation of the problems and potential solutions in the region. Indeed, the proposed project in the 1986 plan could be considered even larger than before. Total installation costs in the 1986 plan had risen to almost $10 million including some proposed additional mitigation.

Virtually every federal and state agency commenting on the 1986 plan expressed concern for the project's impacts to wetlands and water quality. The U.S. Department of Interior (DOI), in particular, was highly critical of the plan, especially its multi-thousand acre wetland impact and its potential to increase nutrient and sediment inputs to the Bay.

Today, after more than 10 years of planning, the project appears stalled because of highly critical comments by the U.S. EPA. The project has yet to be deauthorized by the SCS to our knowledge. Attached to our statement is a copy of EPA and DOI comments on the 1986 plan.

2) St. Mary's River Project

In 1982, the Army Corps of Engineers issued a notice for permit application for an SCS P.L. 566 project involving an earthen impoundment on the Main Branch of the St. Mary's River in Southern Maryland. The primary benefits (up to 95%) of the

project were devoted to increased flat-water recreation and the development of a state park. Ironically, St. Mary's County is a peninsula bordered on three sides by the Potomac River, the Patuxent River and the Chesapeake Bay.

Like the Chester River Project, comments to the St. Mary's EIS stressed inadequate information and consideration of alternatives and, subsequently, the SCS agreed to publish a supplemental EIS in June, 1983. This supplement was circulated in-house and, ultimately, never released for public comment. Like the Chester, this project has not been deauthorized to our knowledge.

The EPA effectively stalled this project as well. In November, 1983, EPA issued a determination expressing its intent to deny the proposed Corps of Engineers permit. EPA was concerned with the loss of more than 500 acres of wetlands (57% of the watershed's total wetland resources), inadequate proposed mitigation, and "unacceptable" adverse impact on fisheries and wildlife. Attached to our statement is a copy of EPA's proposed determination.

3) Other P.L. 566 Projects in the Chesapeake Bay

The SCS has "approved for operations (installation)" other channelization projects like the Chester River Project, although smaller in size. These projects include: Marshyhope Creek Watershed ($4 million P.L. 566 funds), Upper Choptank River Watershed ($1.2 million P.L. 566 funds), and Goldsboro Watershed ($1 million P.L. 566 funds). All of these projects are located

on Maryland's Eastern Shore involving stream channelization, wetland loss, and adverse impacts to water quality.[7]

In addition, there are four similar Eastern Shore watershed projects with applications approved by the State Soil Conservation Committee but pending before the Chief of the SCS.[8]

V. CONCLUSION

The large-scale stream channelization projects proposed for the Eastern Shore of the Chesapeake Bay are similar to many other drainage projects proposed by the SCS throughout the nation. In virtually every case, these projects will destroy habitat, drain wetlands, and increase nutrient and sediment loadings to local waters. Equally important, these projects represent lost opportunities for environmentally-sound projects aimed at resource restoration, erosion control and water quality improvement.

Other types of P.L. 566 projects can be equally damaging to the environment. The proposed impoundment for recreational purposes in St. Mary's County, Maryland would have consumed 57% of the river's total wetlands. Again, extensive resources were consumed with apparently little consideration to high-priority erosion and water quality problems in St. Mary's County.

The proposed Lower Des Plaines Tributaries Project will consume enormous SCS resources which should be directed to agricultural erosion and pollution control. Structural, urban flood control projects like the Des Plaines Project should not be

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7 Soil Conservation Service. "Maryland Water Resources Progress Report 1986". College Park, Maryland. January, 1987.
8 Ibid.

a priority of the SCS.

We believe it necessary for Congress to redirect SCS P.L. 566 activities to focus on high-priority agricultural resource problems. The basic motto of the SCS, "hold the raindrop where it falls," should be an important goal in P.L. 566 activities. Today, unfortunately, with major resources directed at drainage and flood control, our nation is missing important opportunities to reduce soil erosion and improve water quality.

Thank you for the opportunity to present our views.

United States Department of the Interior
OFFICE OF THE SECRETARY
MID-ATLANTIC REGION
Custom House, Room 502
Second and Chestnut Streets
Philadelphia, Pennsylvania 19106

ER-86/1339

DEC 16 1986

Mr. Douglas E. Hawkins
State Conservationist
207 Treadway Towers
9 E. Loockerman Street
Dover, DE 19901-7377

Dear Mr. Hawkins:

This responds to your request of October 22, 1986, for the Department of the Interior's review and comments on the Draft Supplemental Environmental Impact Statement for the Upper Chester River Watershed in Delaware and Maryland.

General Comments

We find it very disappointing that after two years of planning, the draft supplemental EIS fails to correct many deficiencies which have been previously identified. This document lacks needed and important information on numerous issues, particularly regarding existing water quality problems and potential adverse impacts to the Chester River and its fish and wildlife resources. Specific comments addressing these concerns are enclosed.

This document does not appear to provide a fair and unbiased representation of existing conditions and probable impacts. Based on numerous studies, there is no doubt that agriculture activities in general and drainage activities in particular increase nutrient and sediment delivery to receiving waters, thereby adversely impacting fish and wildlife resources. We disagree with the document's conclusion that this drainage project will actually be beneficial to the water quality of the Chester River. The document is misleading through the use of figures from various studies of different systems that are applied as proportional representation of the Chester River watershed. Additionally, the Chester River watershed's proportional contribution to pollution of the Chesapeake, while very important, is emphasized in the report while neglecting the considerable impacts to the Chester River resources. In order to clean up the Chesapeake Bay, it will be necessary to deal with each source of pollution because the problem is cumulative. No one single source is the cause, but all the sources are responsible, including the Chester River watershed project. We note also that the document has many undocumented assumptions and conclusions. We conclude that this project, as proposed, will increase nutrient and sediment loads to the Chester River and ultimately to the Chesapeake Bay, and as a result, will have adverse biological impacts.

Although mineral resources and mining activities are not addressed, we do not anticipate any conflict between the proposed project and mining exploration or development.

The final determination of the State Historic Preservation Officers for Maryland and Delaware concerning potential impacts to archeological and historic resources, along with appropriate mitigation measures, should be included in the final supplemental EIS.

Summary Comments

We find the proposed Chester River drainage project in conflict with the multistate and federal Bay restoration programs currently underway. It is our assessment that this project as proposed, will increase nutrient loading to the Chester River and ultimately the Bay. The effect will be to worsen the extensive nonpoint source pollution that has contributed to the decline of important Bay resources such as striped bass, herring, perch, oysters, clams, and waterfowl. It appears that the costs of the proposed project, in particular the impacts to water quality and to the fish and wildlife resources of the Chester River and the Chesapeake Bay, far exceed the benefits.

Sincerely,

Anita J. Miller

Anita Miller
Regional Environmental Officer

Enclosure

bcc: FWS, KINSER ✓
BN, COCHRAN
GS, FREIBERGER
NPS, GIFT

ER
OEPR
READING

Department of Interior's specific comments on Upper Chester River SEIS

Section 1.0 Project Setting - This section sets the tone for the entire document by stating that the proportion of the Chester River to the Chesapeake Bay is quite small. The implication throughout the document is that nutrient inputs and impacts to the Bay system are very minimal and therefore quite insignificant. The important issues here are potential impacts to the resources of the Chester River (primary importance) and Chesapeake Bay (secondary importance). Therefore, emphasizing a relative regional setting in which the Chester River is only a small part is misleading and infers that there is no concern over the Chester River resources.

Additionally this section states that the project is actually a reconstruction of existing ditchwork. The document is replete with these statements throughout. The obvious intended purpose is to mislead the reader into believing that the existing "ditch" system is in a highly altered state and therefore, impacts to natural resources would not be severe.

However, page 16 states that the majority of drainage ditches have been undisturbed for almost 40 years. What is left unsaid is that these ditches have reverted back to a near-natural state in most of the project area and therfore, impacts are similar to what would be expected if a natural stream was being channelized for the first time.

Section 2.3 Forestry - There are no clear relationships distinquished between Section 2.3.1 (Environmental Stress/Resource Problems) and Section 2.3.3 (opportunities created through the PL-566 program). The major problems identified are gypsy moths, shoe-string root rot and effects from drought. The opportunities discussed include improved drainage of the forestland. If forestland needs drainage for "proper forest management," then a situation is being created where the SCS-sponsored project provides a mechanism whereby state agencies will provide technical assistance to land owners to drain forested wetlands. SCS should be providing new opportunities for wetland preservation, not wetland drainage. Contrary to the idea presented, a specific landowner's goal may not be forest management for timber production but for wildlife purposes.

Section 2.4 Wetlands - Wetland losses of almost 50 percent are identified, but the predominant causes for those losses (agriculture activities), are not identified. Wetland values relative to the endangered plant Oxypolis canbyi are identified, but the document fails to discuss other wildlife and fish values associated with wetlands.

Regarding the stated opportunity for technical leadership for the "swampbuster" provisions of the Farm Bill, the Department of Agriculture is promulgating rules for implementation. Therefore it would be most appropriate for SCS to discuss these provisions and "conservative reserve" and "sodbuster" provisions of the Food Security Act of 1985.

Section 2.5 Water Quality - There is an apparent attempt to minimize the severity of the existing water quality problems within the Chester River by comparing total inputs to the Chesapeake Bay. This Section contains misleading information and ignores specific detailed information as provided in the referenced studies. The total contribution of nutrient inputs to the Bay via the Chester River is not the major issue. Nutrient enrichment to the Chester River and ultimately, increased inputs to the Bay are of great concern. The intensive Chester River Watershed Study found severe nutrient enrichment as measured by elevated chlorophyll-a levels. Frequent algae blooms occur above Chestertown and Millington. The cause of the algae blooms are excessive amounts of nutrients. The major phosphorous loading occurs as export from agricultural land during storm events. Nitrate levels in the upper river (0-3 ppt salinity) are quite high. The major source of nitrate to the Chester River is fluvial inputs (again from agricultural land).

To state that the upper segment of the Chester River was rated in the middle of the overall water quality scale (6 out of 11) is misleading because of the inclusion of the toxic metal contamination ranking (1 out of 5) in the overall ranking. Since toxic metal contamination is not a significant concern, the emphasis should be properly placed on nutrients where the ranking was poor (5 out of 6).

The reference by Blosser, as cited on page 30, is not listed in the reference section. It would be appropriate, in light of the significant nutrient problems, to include more specific data from this reference regarding the elevated levels of nitrogen and phosphorous. Nutrient concentration data and loading rates as provided in the Blosser or other relevant studies should be included.

The opportunity for extensive water quality monitoring as discussed is not precluded by the proposed ditching project. It is encumbent upon SCS to provide adequate water quality data in order to properly assess the potential impacts. If data regarding nutrient concentration and loading yields for agricultural land exists for the watershed, then it should be reported in detail. If sufficient data is not available, then SCS is obligated to implement the studies necessary to provide that data prior to the initiation of any construction work.

Finally we find no discussion of how nutrient enrichment may adversely effect water-dependent fish and wildlife. Adverse effects of nutrient enrichment on fish habitat, spawning efforts, shellfish, SAV, waterfowl, etc. should be discussed.

Section 3.2.3.2 Soil Erosion and Sedimentation - As stated in the document, channel erosion is almost negligible. However, upon removal of riparian forest vegetation and construction of the channel, erosion rates will increase significantly, with sediment yields for eroding channels close to 100 percent. This should be pointed out and discussed in greater detail. Although the overall sediment yield of the Chester River to the Bay may be

small compared to all Bay sources, the impacts of sediment on fish and shellfish, etc. must be discussed, including impacts to the three man-made impoundments in the Maryland portion of the watershed.

Section 3.2.5 Forests - The total amount of bottomland hardwood acreage, as shown in table 3C is 17,138 acres. These woodlands would be classified as palustrine forested wetlands. However, this total does not equate with the 15,149 acres of forested wetlands identified as type 1 and 7 in table 3D. This discrepancy should be resolved.

Inherent in your discussion in this section is that the value of a forest stand is solely related to its value in the timber market place. Because much of the forestland is located on poorly drained sites, the forestland value is low. However, when "properly managed" (as a timber crop presumably by drainage and timber-stand improvement) the value is increased. The assumption here is that every private landowner maintains forests as a timber crop, when such is not the case. A recent survey of private forestland owners throughout the country indicated that wildlife and other values were the primary reason for timber ownerships. Therefore it is presumptous to assume that timber crop management is the goal of all landowners in the watershed. Other values are important particularly when such a large percentage of the forestland is bottomland hardwoods.

Section 3.2.6 Lakes and Wetlands - The introductory paragraph to wetlands on page 46 briefly but inadequately discusses one value of wetlands. The inference is that since depressional wetlands do little to moderate adverse impacts to water quality, they have no value. A wetlands value discussion should not be limited in scope to moderating surface flow pollution. There are many important wetland values that could be mentioned, including habitat values for various species, pollution filtering of surface and groundwater, flood storage capacity, aquifer recharge, etc. An obvious omission in the nutrient discussions on page 46 and 48 is the importance of nutrient reduction of the shallow groundwater zone or unconfined aquifer. Specific studies referenced elsewhere in the document discuss at great lengths the values of riparian wetlands (the predominate type within the watershed) in reducing and eliminating elevated nitrate levels in groundwater. The mechanism of nitrate removal is not as important as the fact that 80-95 percent of the nitrate concentration of phreatic water moving from agricultural crop fields is removed as it passes through the riparian forests. Finally, there is no documentation for the statement that "nutrient loading reduction capacity of these wetlands has been impaired by prior channelization" as a result of spoil deposition. Unless there is factual documentation to back up this claim, it should be deleted and replaced with a more appropriate discussion of the valuable nutrient-filtering capacity of forested riparian wetlands.

Section 3.2.8 Surface Water Quality - This section is misleading. Whether or not the amount of nutrient and sediment inputs from the Chester River to the Bay is "trivial" can be easily debated and need not be emphasized. The fact is that the River is important by itself as habitat to many

migratory and resident fish and wildlife species. This section should emphasize the water quality issues of the Chester River, not generalize about its overall contribution to the Bay. A fair and accurate accounting of the existing problems needs to be reported.

Documentation of existing nutrient problems as reported in the Bostater et al., referenced study were not presented in this section. The following paragraph highlights these findings.

Chlorophyll-a levels occurred above 50 ug/l and even as high as 100 ug/l. This indicates that the Chester River in experiencing nutrient enrichment. Point source contributions are insignificant on a basin-wide basis. The major sources of nutrients are from fluvial inputs primarily associated with storm events. Agricultural land use activities are the major contributor of nutrients. In one 5-month period, 270,000 pounds of nitrate was flushed into the Chester River. A large portion (110,000 lbs) was flushed out into the Bay. No sources of nitrate plus nitrite were indicated as coming from the Bay. Overall, 18-20 percent of the nitrogen load to the river is flushed to the Bay.

The conclusion drawn from this information is that significant loading of nutrients occurs from upland agricultural land uses and the majority of these nutrients is assimilated by the Chester River. This creates high Chlorophyll-a levels and periodic algae blooms with detrimental impacts to aquatic resources. Approximately 1/5 of the total nitrogen load gets exported to the Bay, therefore the Bay exerts very little influence on the water quality of the Chester River, and in fact the Chester River influences Bay water quality. This information should be clearly presented in the document.

Section 3.2.9. Living Resources - This section fails to address the importance of the Chester River to species other than striped bass. Important species such as herring and alewife, yellow and white perch, menhaden and shellfish should be discussed. The anadromous fish-spawning areas, as well as oyster bars and SAV beds, should be identified in order that the relationships of nutrient enrichment problems and these resources can be discussed. The economic and recreational value of these important resources to the local communities and the state of Maryland need to be addressed also.

The discussion of wildlife values should not be limited to public hunting lands. The limited amount of forest land in the watershed increases the value of that land to wildlife. Because of the intensity of agriculture in the watershed, most of the forestland is located along stream corridors. These areas are extremely important as wildlife habitat and they serve as migratory and movement corridors between the few larger blocks of forestland. Also excluded in the document is a discussion of the value of various wetland types to wildlife.

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Section 3.3.4 Cultural Resources - The statement indicates that the identified plan alternatives will have no significant impact on historic or archeological resources. Plan implementation includes completing an historic properties survey before the beginning of construction to avoid or mitigate adverse effects before completing the project.

To insure the preservation of all cultural resources as defined by the National Historic Preservation Act of 1966, we recommend that the final determination of the State Historic Preservation Officers for Maryland and Delaware be obtained and the appropriate mitigation measures developed and included in the final statement.

Section 4.0 Alternatives - A significant omission in the discussion of land use alternatives (Section 4.1) is the effect other USDA agricultural programs have had on the cropland production within the watershed. For the past few years agricultural land has been taken out of production by virtue of the PIK and commodity guarantee programs. The attempt to reduce the acreage of tillable lands has been supported by the recently-passed Farm Bill. The importance of such programs which remove cropland from production should be discussed.

The discussion concerning alternative A does not show a realistic picture of a no-action alternative. Some of the Delaware portion of the project will be constructed regardless of Federal involvement. Delaware drainage law provides project planning and construction funds to counties for construction of ditches. Also it is likely that the sponsoring state agency in Delaware (DNREC) does have the capability to prepare the necessary evaluations required by the Corps of Engineers for Section 404 permits. The amount of work likely to be accomplished can, in all likelihood, be quantified. In fact the document states that 143 miles of non-Federal drainage work is incorporated into the overall project. Much of this proposed work is likely to occur without a Federal project.

The statement that an undetermined amount of cropland would likely be abandoned is misleading. Any cropland taken out of production would be (1) poorly drained cropland which would revert back to wetlands or (2) a result of other USDA programs which remove cropland from production on an incentive basis. The overall economy has a greater influence on farm foreclosures and unemployment than any minimal economic gains to individual farms which would be lost if this project was not constructed.

Section 4.7.3.2. Agricultural Ditch Restoration - This section does not discuss (or provide a reference to other documents) clearing and spoil deposition widths for the various types of construction practices.

It is stated in the document that when conditions are favorable, all disturbed areas would be seeded. If conditions are not favorable for seeding, then other methods of soil erosion control should be employed. It is very disturbing to believe that a Federal agency which takes pride in its 50 years of leadership in providing technical assistance to farmers and landowners for reducing soil erosion would not implement erosion control

measures on their own project, if seeding conditions were not favorable. The unfavorable season (winter) is the period of maximum rainfall. If disturbed areas are being exposed for extended periods of time, conditions are created for extensive erosion and sedimentation to occur. Using the universal soil loss equation, it is estimated that the bare streambanks would have an erosion rate of 485 tons per acre. After establishment of grasses, the rate of erosion would be between 5 and 48 tons per acre, depending upon the adequacy of the herbaceous coverage. Since the disturbed areas are immediately adjacent to streams, the sediment yield would be close to 100 percent significantly greater than the 3 percent yield estimated for crop field erosion.

Chapter 5 Impacts - We find serious deficiencies in this section regarding impacts. The results of studies reported in the erosion/sedimentation sub section (5.3.3) are questionable because of the location of sample collection and methods of reporting results. Conclusions based on average sediment concentrations for the period of records is misleading because most sediment loads get transported during storm flow, not base flow. A large percentage of sediment load to the Chester River and Bay occur from relatively few storm events. As correctly stated, channel modification increases suspended sediment during construction. Turbidity levels, as a result of suspended sediment, have been recorded as high as 2000 JTU one mile downstream of ongoing channelwork. This is greater than a 1200 percent increase over state water quality standards. Therefore, the cumulative effects of elevated suspended sediment levels on downstream aquatic resources over the 7- to 10-year construction period could be significant.

Finally, we find no discussion of impacts to aquatic resources downstream of the construction areas. The amount of sediment reaching the Bay is not as significant a concern as the increased sediment delivered to the Chester River downstream of the construction area. Impacts to the fish resources of perennial freshwater streams, 3 man-made reservoirs and the Chester River mainstem could be significant and should be discussed.

Section 5.5 Forestry Impacts - This section does not adequately discuss impacts to forestry, but discusses potential benefits of crop timber as a result of drainage. The potential for degradation of forest resources as provided in the SEIS has previously been identified as being caused by Gypsy moth, shoe-string root rot, and drought. The first two conditions are not influenced with or without the project. Mortality of stressed trees by drought will be exacerbated by drainage and lowering of the water table.

More germane to this impacts section would be a discussion of the quantity of forest land (riparian and upland) lost as a result of the construction activities and the lost wildife and water quality values.

Section 5.6 Wetlands - Significant controversy surrounded the 1982 FEIS regarding wetland impacts. An evaluation by the USFWS Region 5 Wetland Coordinator of Alternative B (the original proposal) indicated there was a

potential for impacts to 2,431 acres of wetlands adjacent to the proposed channels and 692 acres of non-contiguous wetlands. The SEIS acknowledges that 1,172 acres would be impacted with Alternative B, a total which is less than half of the Fish and Wildlife Service estimate. The Service also evaluated potential wetlands losses through the use of intensive photo interpretation of pre- and post-project aerial photos of the adjacent Upper Choptank drainage project. The photo interpretation revealed that as of the early 1980's, 2,777 acres of wetlands were lost as a direct result of channelization. Of that total, the loss of almost 450 acres was directly attributed to spoil disposal, while the balance was a result of drainage effects and conversion. Also, with a proposal for an additional 143 miles of drainage ditches, we would expect to see a significant increase in the USFWS estimated wetland loss of 2,431 acres. The 1,849 acres of wetland impacts presented in Alternative C is closer to the Fish and Wildlife Service's estimate, but is probably still conservative. Without adequate documentation of the effects of drainage control structures on wetlands, it is difficult to evaluate the expected reduction in wetland impacts to 996 acres as described in Alternative D.

Without a map showing the location of wetlands in relation to proposed channels and drainage control structures, it is difficult to adequately evaluate potential loss. Since wetland losses are a significant issue, it is in the public interest to develop a map showing location of wetlands in the watershed in relation to proposed channels and drainage control structures.

Section 5.8 Waterquality - This section should explicitly identify the adverse impacts to water quality resulting from channelization. Instead, significant information is not presented. The establishment of a monitoring program to measure pre-and post-project nutrient levels does not negate the need for adequate baseline data by which proper nutrient estimates can be made. The concern over significant elevation of nutrient levels needs to be properly addressed prior to any construction.

This section needs to identify specific increased loading rates for nutrients resulting from open ditches and tile drainages and should thoroughly discuss the effects of nutrient enrichment on aquatic resources within the Chester River.

Specific studies were utilized to calculate nutrient reduction potentials as a result of installation of water control structures. If the study area used to determine nutrient reductions is comparable to the Chester River Watershed, then it is encumbent upon SCS to utilize data from this same study to determine nutrient load increases as a result of channel and tile drain construction. This data showed nitrate concentration of 0.2 mg/l for natural drainage of poorly drained soils, but significantly elevated levels of 5.2 mg/l for improved drainage. The same researcher has determined cropland yields of nitrate to be in an average range of 24-40 lbs per acre. This is significantly higher than his reported rate of .08 lbs/acre for forestland. He also indicated that nitrogen concentration in tile drains

was much higher than in farm ditches. Approximately half of the proposed 200 miles of on-farm work is tile drain.

The Report estimates that an average of 33 percent nitrate reduction in drainage water can be obtained by the water control structures. However, an obvious omission is the fact that wooded riparian areas can cause an 80-95 percent reduction in groundwater nitrate primarily by denitrification. Woody vegetation uptake of nutrients as well as heterotrophic immobilization in the soil and litter can also account for significant nitrate loss. These woody riparian areas will be eliminated as a result of the proposed project.

The data presented for nitrate reductions for Alternatives A through D have no documentaton to support the figures used in the calculations of nitrate increases and reductions. Proper documentation is necessary for proper evaluation of impacts. Page 124 states that the water control structures will reduce the nitrate concentration of the drainage water by 33 percent. However, this conflicts with the nutrient reduction data for Alternative D, (page 128). The data presented show on 8 lb/acre increase in nitrates due to channelization but an 11 lb/acre reduction in nitrates as a result of the water control structures. This is a 140 percent reduction, far greater than the realistic 33 percent reduction which might be obtained. It is not appropriate to use a load reduction figure which is not related to the percentage reduction stated. There are many factors which influence denitrification including management of the structure. As stated in the referenced study by Gillian and Skaggs, the nitrate reductions obtained are for a particular set of management conditions; other management conditions will yield different results. The specific management conditions have not been discussed in detail.

Climatic, soil, topographic, land use, and management factors affect the form and amount of nitrogen reaching receiving waters. Additional factors which directly influence denitrification include pH, temperature, and most important, organic matter, which is essential as a source of electrons and energy.

Denitrifiers can utilize a wide variety or organic substrates. However, the proposed ditching will deepen and widen existing streams thereby eliminating organic matter within the stream substrate. Removal of the riparian vegetation will severely reduce additional inputs of organic matter. Therefore, denitrification rates will be low. Decreasing temperatures in the fall and winter will reduce denitrification rates. An increase in nutrient loading occurs during this period because of an increase in base stream flow. Therefore, the least denitrification may well occur at a time of large inputs of nutrients. Water control structures will minimally reduce the increased nitrogen loads to the Chester River, but the net change is likley to be a significant increase in nitrogen loading, with 18-20 percent of the net increase being transported to the Bay.

Section 5-9 Living Resources - The Fish and Wildlife subsections are deficient in their discussion of impacts. Minimizing the discussion of potential impacts by stating that the streams have been previously altered is purposefully misleading. As stated in the SEIS, it has been almost 40 years since most of the proposed channels have experienced any construction activity. This has provided time for an extensive recovery to take place. Additionally, impacts to the aquatic system are not limited to the construction zone but also downstream aquatic areas. Impacts to fish are likely to occur in downstream perennial streams, the three man-made lakes and the Chester River. Native fish could be impacted. The project could have adverse effects on the fish hatchery operation, and on migratory fish spawning and shellfish areas within the Chester River.

Since most of the perennial streams are located downstream of the proposed work, recovery of aquatic resources will not begin to occur until suspended sediment levels fall to post-project levels. We can expect to see a depressed fishery resource for at least 10 years after the start of the construction. We anticipate a much longer stream recovery period because of the slow recovery period expected. In addition to sediment impacts, a further decline in fishery resources can be expected as a result of additional nutrient loading to the Chester River. An increase in nutrients will further degrade water quality, and thereby adversely impact anadromous fish spawning, nursery areas, shellfish beds, SAV, and waterfowl.

The proposed wetland mitigation needs further review and coordination. Since most of the wetlands projected to be lost are riparian in nature, their intrinsic wildlife habitat and water quality ameliorative values are important. The Fish and Wildife Service's policy is to request mitigation on-site whenever possible. Since wetlands are classified as Category I or II within the Service's mitigation policy, mitigation will require no net loss of in-kind value. In addition to habitat, this value includes nutrient reduction benefits greater than those obtained by the water management control structures.

Section 5.9.3. Impacts to downstream resources of major significance - This section is seriously deficient in its discussion of impacts. Important resources include not only SAV but striped bass, herring, white and yellow perch, oysters and waterfowl. This section should provide a detailed and accurate discussion of impacts resulting from increased sediment and nutrient loads.

Summary Comments

This document is seriously deficient in its discussion of existing resources and potential impacts to fish and wildife. Further, conclusions made in the document regarding the minimization of impacts from increased sediment and nutrient loadings are not substantiated. The purpose of the project (to increase crop production) is in conflict with other USDA programs which are currently taking cropland out of production. An adequate evaluation of these various USDA programs is necessary.

The Fish and Wildlife Service concludes that this project as proposed will increase nutrient and sediment loads to the Chester River and ultimately the Bay. See rest of summary comments.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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841 Chestnut Building
Philadelphia, Pennsylvania 19107

JAN 30 1987

Mr. Douglas Hawkins
State Conservationist
U.S. Soil Conservation Service
Treadway Towers
9 East Loockerman Street
Dover, DE 19901

Re: Draft Upper Chester River Watershed Supplemental Environmental Impact Statement, October 1986

Dear Mr. Hawkins:

Pursuant to our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, we have reviewed the above referenced document. We thank you for the opportunity to comment on the draft Supplemental Environmental Impact Statement (DSEIS) for the P.L. 566 Agricultural Channelization project proposed for the Upper Chester River Watershed. Our detailed review is contained in the attached technical comments pages with our major concerns highlighted below.

In general, we believe that the SCS has presented accurate estimates of the mileages of agricultural drainage ditches that could be constructed in the watershed as well as estimates of wetland acreages that would be impacted by various construction scenarios outlined in the DSEIS. We are concerned, however, that the document does not contain sufficient information to fully assess the environmental impacts and economic viabilities of project alternatives other than the "no action plan" or Alternative A. The assessment of water quality impacts and treatment of wetland losses and mitigative features for Alternatives B, C, and D lack both the supporting data and key information upon which calculations and assumptions for these environmental effects were based.

Our review of Alternatives B, C, and D indicate there are significant direct and potentially unacceptable adverse environmental effects in both duration and geographical scope that would result from the implementation of any of these alternatives as proposed. Implementation of the least damaging of these alternatives (D) would impact 996 acres of wetlands, 240 miles of stream habitat and has the potential to exacerbate nutrient loadings downstream over a seven-year period. Alternatives B and C implementation will result in impacts to 1,172 acres and 1,849 acres of wetlands (respectively) as well as 240 miles of stream habitat and water quality impacts.

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We believe that the Watershed Plan and the proposed project alternatives must be considered not only in the context of impacts to the Chester River but of the potential cumulative impacts to the Chesapeake Bay that can result from project implementation in concert with other large-scale drainage projects in the planning stages for the Eastern Shore of the Chesapeake Bay. The environmental effects of these channelization projects are directly contrary to the goals of the Chesapeake Bay Program to reduce nutrient loading from non-point sources, to restore habitat, and to enhance living resources in the Bay and its tributaries.

The potential exists for significant water quality impacts from project construction. As acknowledged in the DSEIS, channelization of streams can result in higher concentrations of nitrate being exported downstream. The document also projects nutrient loadings expected from implementation of each alternative and incorporation of mitigative features but does not provide the data or rationale used to derive these estimated loadings. Lacking this information it is impossible to either determine the degree of adequacy of proposed water quality mitigative measures or the impacts to downstream water quality that would result from drainage ditch construction alternatives.

Direct, as well as secondary impacts to wetlands will result from agricultural channelization by both excavation and spoil deposition in riparian wetlands and by lateral drainage effects. Construction of ditches will result in significant losses and alterations of important wetland structure and functions. Functionally important nutrient assimilation and filtration, sediment trapping and flood ater regulation components of these systems will be impacted and habitat altered or lost. No information is provided as to the type, extent, and location of wetland areas with respect to planned drainage ditches. Therefore, it is impossible to determine if the wetland impacts have been avoided or minimized to the greatest extent practical as required by the Section 404(b)(1) Guidelines of the Clean Water Act. However, we believe that the impacts to at least 997 acres of wetlands and potentially 1849 acres of the total wetlands in the watershed constitute an unacceptable adverse environmental effect that would result from channelization as proposed.

We are concerned that mitigative measures both for water quality and wetlands may be inadequate. A detailed analysis of the efficacy of water control structures in regulating nutrient outflows is not furnished. Projected decreases in loadings must be based on thorough and rigorous mathematical determinations. EPA also routinely requires mitigation for unavoidable wetland impacts on an in-kind, on-site and 1:1 basis location of proposed mitigation creation on a 4:1 basis upstream from construction activities will not mitigate the loss of wetland functions in the watershed or provide water quality benefits downstream.

Channel excavation will also increase stream base flows and reduce flood peaking time that would result in the exacerbation of urban flooding problems, especially in the Millington, Maryland area. No documentation is provided that substantiates the 0.1 foot reduction in flood stage projected in this area while the DSEIS acknowledges that base flows will increase but are unquantified at this time. In addition, only cursory treatment is given to impacts on stream habitat and fisheries resources.

The benefits to the regional economy through increased agricultural production from channelization resulting in higher yields must be considered in the context of the existing agricultural subsidy programs, especially when benefits are realized at the expense of environmental quality. We believe that the Acreage Reduction Program, or Payment-in-Kind (PIK) Program, which pays farmers to idle tilled cropland, should be evaluated in the C/B ratio of this multi-million dollar drainage project. Approximately 10% or 14,000 acres of all tilled cropland was removed from production under the 1986 program in Queen Anne's County, Maryland alone (J. Heisler, per. Comm) while the proposed project will benefit only 12,000 acres of wet cropland and 10,293 acres of well drained but intermixed soils. Acreage of idled cropland for the Upper Chester River Watershed apparently exceeds the acreage of cropland benefitted by this project.

As a result of the above concerns, we have rated Alternatives B, C, and D in this document as Environmentally Unsatisfactory (EU-2) in EPA's referenced category. We have rated Alternative A or the no action plan as EC-2. Enclosed is a copy of the Definition of Codes for the General Nature of EPA Comments to provide a more detailed description of these ratings.

While we were unable to meet on January 26, 1987 to discuss our technical comments and concerns, we encourage SCS to fully explore the feasibility of modifying and redesigning Alternative A to serve the needs of the agricultural community by incorporating accelerated land treatment measures, clearing and snagging and on-farm drainage coupled with Best Management Practices. Any new design should avoid adverse impacts to wetlands and water quality. Such an alternative would satisfy not only the goals of the Clean Water Act but the goals of the multi-agency, multi-state cooperative effort to protect and restore the valuable resources of the Chesapeake Bay and tributaries. In this stead we would certainly be available to cooperate with you in developing an alternative and an approach to its implemention.

Sincerely,

James M. Seif
Regional Administrator

Enclosures

UPPER CHESTER RIVER WATERSHED:

SPECIFIC COMMENTS:

The following comments will discuss the adequacy of the Draft Supplemental Environmental Impact Statement for the Upper Chester River Agricultural drainage project and the potential environmental effects that could result from project construction. In general, analyses of impacts must be substantially improved in the discussion of environmental effects. Currently the document is deficient in providing key information regarding location and extent of wetlands affected, through analyses of potential water quality impacts, location and extent of mitigtive measures including wetlands creation and water control structures, urban flooding and regional economic benefits. Construction of project alternatives, as proposed, will result in significant adverse environmental impacts. The effects of these impacts must be considered not only for the Chester River but cumulative impacts on the Chesapeake Bay must be determined.

Water Quality Impacts

The potential for water quality impacts from channelization projects that circumvent riparian wetlands along small, low order streams is well documented. Kuenzler et al (1977) showed concentrations and exports of nitrate were considerably higher for channelized streams than for natural streams with intact forested wetlands during high discharge with considerable flooding. These same floodplain forests also show a high capacity for phosphorus retention and cycling (Yabro 1979). Denitrification is an important mechanism controlling NO_3-N outflow from agricultural lands. Reduction of NO_3-N takes place in poorly drained soils because of saturated soil conditions. Nitrate ions that are not reduced move to streams by base flows unless the water emerges in a wetland where it may be reduced to gaseous nitrogen or absorped by marsh vegetation (Biggar and Corey 1969).

Water quality problems exist in the project area due to excessive nutrient loading (FEIS, 1982). The major sources of nutrients contributing to eutrophic conditions in the Upper Tidal Chester River appear to be chemical export during base flow conditions or during storm flow regimes (Bostater et al 1983). Construction of drainage ditches in the Upper Chester Watershed will increase base flows with the amount of increase unquantified at this time (DSEIS, 1986). Implementation of channelization in the watershed will result in more intense agricultural activities with increases in fertilizer applications, all of which can exacerbate the existing water quality problems in the Chester River.

The Chesapeake Bay Program has identified serious water quality problems in the Chesapeake Bay resulting from nutrient enrichment (EPA, 1983). Increased nutrients loads in the Bay and Eastern Shore tributaries are derived primarily via non-point source inputs from agricultural runoff (EPA, 1982). Nutrient enrichment has resulted in increased primary productivity, increased turbidity and decreased dissolved oxygen values. The volume of waters in the main Bay showing low or no dissolved oxygen has increased 15-fold in the last 30 years due to increased algal production. This enhanced phytoplankton growth also reduces the amount of available light to submerged aquatic vegetation (SAV). Consequently an unprecedented decline in the distribution and abundance of SAV during the last 15 to 20 years has been documented for the Chesapeake Bay (Orth and Moore 1983). The importance of SAV in the Chesapeake Bay ecosystem cannot be underestimated. Submerged aquatic grasses are vitally important to the Bay because of their value as large primary producers, food sources for waterfowl, habitat and nursery area for fish and invertebrates, controls for shoreline erosion, and mechanisms to buffer negative effects of excessive nutrients. The Chester River provides almost 10% of the Chesapeake Bay's submerged aquatic vegetation. It is therefore imperative that any channelization project in the Upper Chester River and Chesapeake Bay drainage that has the potential to amplify water quality problems and impact living resources, especially SAV, be thoroughly and vigorously evaluated.

We are encouraged that SCS recognizes that agricultural drainage results in increased nutrient loadings, especially nitrate to downstream receiving waters. We are also encouraged that one project alternative incorporates water control structures to mitigate these impacts. We are extremely concerned, however, that the scope and extent of project alternatives other than the no action plan, have the potential to seriously impact water quality and living resources. Currently the nutrient loadings projected for each alternative lacks the necessary information and key data upon which a thorough and rigorous evaluation of these alternatives can be made. It is necessary to document the assumptions regarding the projected increases in nutrient applications as well as include the calculations used to arrive at projected loadings from these increases. Various factors must be taken into account in these analyses and when analyzing the ability of water control structures to regulate the amount of NO_3-N in drainage waters. These include soil profiles, rate of N fertilization, drainage volumes, type of crop grown, drainage system design and loss of nutrient removal capacity of riparian wetlands through channelization. Only through appropriate modelling to predict nutrient efflux from agricultural soils by simulating various conditions can results be obtained that adequately predict not only the potential water quality impacts of the proposed alternatives, but the efficacy of water control structures to mitigate these impacts.

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Future analyses must adequately address the water impacts of a channelization project of such magnitude. Construction of up to 440 miles of agricultural ditches, relying upon the voluntary installation of best management practices by farmers and converting thousands of acres of wetlands from valuable sinks of nutrients to potential nutrient sources must be thoroughly evaluated with regards to the resources, especially SAV, of the Chester River and Chesapeake Bay.

Wetland Impacts

The draft SEIS appears to be accurate in the estimate of total wetland acreages in the project area, however SCS continues to use Circular 39 (Shaw and Fredine 1957) nomenclature. We recommend that the more recent classification scheme of Cowardin et al (USFWS 1979) be used so that impacts may be more adequately assessed and mitigation evaluated.

Other than Alternative A or the no action plan, Alternatives B,C and D will all have significant adverse impacts to primarily PFOIA/C and E wooded wetlands located adjacent to stream corridors or in isolated pockets interspersed with farm fields. Alternative B will impact 1172 acres of wetlands or 7.5% of total wetlands in the watershed, Alternative C, 1849 acres or approximately 11.1% of the total, assuming in both cases lateral drainage effects of 300 feet from channel edge. Alternative D, incorporating water control structures to mitigate lateral drainage effects to 150 ft. from the channel edge, will still impact 996 acres of wetlands or 6.3% of the total in the Upper Chester Watershed.

These floodplain wetlands not only provide critical non-point source pollution control functions but are important regulators of hydraulic regimes lowering flood peaks and controlling the rate and quality of sediment and organic detritus delivery (Wharton et al 1982). These annual pulses contribute significantly to estuarine productivity just after winter/spring peak flows in the Chesapeake Bay Region (Copeland 1966). Substantial recharge of the ground water reservoir also occurs during periodic inundation of floodplain wetlands (Kilpatrick 1966) and riparian ecosystems have been demonstrated to be important in reducing sediment loads in streamflow, serving as sinks for large quantities of sediments and ameliorating the downstream effects of erosion (Lawrance et al 1986). They act as a buffer zone for agricultural areas where excessive nutrients, sediments and associated contaminants from upland sources may be filtered and assimilated (Lowrance et al 1983). These forested wetlands also provide wildlife habitat and cover especially in intensely cropped areas where little forest remains.

As stated in the SDEIS impacts to these important riparian ecosystems will result from channel construction and spoil deposition as well as through lateral drainage effects. Maps identifying type, location and aerial extent of wetlands in reference to planned channel construction must be supplied in order to evaluate the impacts to specific wetlands that will result from ditching activities. These impacts will be considered unacceptable unless demonstrated to be minimized or avoided to the greatest extent practical.

The discussion of wetlands impacts should include the effects of the loss of functional values, iterated above, from drainage ditch construction. The effects of such large losses of wetlands habitat and functions should not only be evaluated in context of the Chester River Watershed but should be analyzed with regard to the cumulative impacts to the Chesapeake Bay. This is especially significant since other large scale drainage projects are in the planning stages for similar areas of the Eastern Shore.

Mitigation

Adequate and appropriate mitigation must be provided for all unavoidable wetland impacts including losses of functional values. Furthermore these mitigation costs must be reflected in the cost/benefit ratio for the project. We are concerned that proposed mitigation for forested wetlands is proposed on a 4:1 basis by establishing greentree reservoirs in areas that may be presently forested wetlands and well above ditching construction. EPA has routinely required mitigation for unavoidable wetland losses be in-kind, in a 1:1 basis and on-site where possible or at least in the same sub-basin. The DSEIS does not specify the extent, type, or location of mitigation areas. Maps graphically depicting these areas in relation to agricultural channels must be furnished. Lacking this information it is impossible to determine the degree of adequacy of mitigation measures for wetland impacts.

As stated in the discussion of water quality impacts, detailed analyses of the ability of water control structures to mitigate water quality impacts are lacking. Again, our recommendation is that appropriate modelling techniques be used to determine predictive capabilities for these structures in the Upper Chester River Watershed to regulate and control amounts of nutrient, sediment and associated contaminants that will efflux from increased agricultural activities in that watershed.

In both areas of mitigation the operation and maintenance of structures should be addressed. The benefits of mitigative measures may be negated unless the proper operation and maintenance of such structures is ensured through enforceable cooperative agreements with tax ditches and Public Drainage Associations.

5

Urban Flooding

One of the benefits from proposed project construction is the alleviation of urban flooding problems especially in the Millington, Maryland area. However, supporting data and analyses are lacking in the discussion of the effects of ditch construction, especially with regards to the larger project alternatives, on the reduction of downstream peak discharges. Gilliam and Skaggs (1986) demonstrated that the most dramatic effect of agricultural land development and channelization on hydrology was the increase in peak runoff rates. These rates included both surface runoff and subsurface drainage to the outlet ditch. Also peak runoff values were determined to occur ealier in areas with drainage systems installed. Therefore, it is important that projected storm stage reductions for each alternative be based on rigorous mathematical analyses. Evaluation of each alternative on urban flooding can only be made after this data is furnished.

Streams

The SDEIS contains inadequate information on the impacts the enlarged projects will have on important stream habitat and to fish and biological resources. Channelization of 240 miles of headwater streams will result in significant adverse environmental impacts to these valuable resources. The deepening, widening, and straightening of natural streams that occurs during channelization results in the alteration of instream habitat by elimination of pools, riffles, and meanders. Concurrently, macroinvertebrate abundance and diversity decrease while the standing crop and species diversity of fish populations are also reduced. For small tributary streams on the Eastern Shore of Maryland species diversity of benthic organisms exhibited a positive linear relationship with years since channelization (Speir et al. 1976) while fish populations in channelized streams in North Carolina demonstrated no significant return towards natural stream populations 40 years after channelization (Bayless and Smith, 1968).

Consideration should also be given to the impacts of the water control structures on the potential to restore the anadromous fishery in the Upper Chester River Watershed. There is no discussion of the potential of those impacts occurring. In addition, we request that the documented spawning areas of striped bass in the watershed be identified and the potential impact of the structural work (drainage and channelization) on spawning be documented.

Increased sediment loads will result downstream due to accelerated bank erosion and the absence of vegetation. The SDEIS states that fish species will be displaced and recovery will not begin until suspended sediment levels from construction activities fall to pre-project levels.

Fisheries impacts should therefore be discussed in the context of the seven year construction phase of the project and the subsequent time required for bank stabilization.

Removal of stream-side vegetation will also result in changes in stream temperature and dissolved oxygen. Channelization has been shown to result in decreased dissolved oxygen levels and elevated temperature levels. (Tarplee et al 1971). This loss of floodplain vegetation also results in the shift of instream energy flows based on annual leaf fall to that of in-stream algal photosynthesis which in turn produces conditions which only a few of the existing aquatic invertebrates and fishes are adapted (Brinson et al. 1981).

The SDEIS acknowledges that the impacts of prior drainage and agricultural practices can still be detected in the Upper Chester River Watershed and that the recovery of channelized streams is very slow. Therefore it is imperative that a thorough analysis of the extent of the impacts to important stream habitat, biota, and fisheries resources from the proposed project be performed. The DSEIS provides only cursory information of the projects potential effects on these valuable resources.

Ground Water

Effects on the unconfined aquifer from increased nitrogen and herbicide and pesticides applications due to increased agricultural activities should be discussed.

Economic Benefits

The history of agricultural drainage in Maryland and Delaware indicates the majority of ditches in the Upper Chester River Watershed have been undisturbed since at least 1937 except for on-farm drainage. Fifty years have elapsed since initial ditch construction and only recently has the SCS determined that channelization is an economic necessity in order to increase crop projection and yields. This is in direct contrast to the Agricultural Acreage Reduction Program or Payment-In-Kind (PIC) Program which subsidizes farmers to idle previously tilled cropland. In the Chester River Watershed, in Queen Anne's Co., Maryland alone, approximately 14,000 acres of cropland were taken out of production under the 1986 program. This represents approximately 10% of the total cropland in the County (J. Heisler, per comm.). This same program is in effect in Delaware but participation by farmers is at a lower level than Maryland. Therefore we believe that the economics of the proposed multi-million dollar channelization project which will benefit only 12,000 acres of wet cropland at considerable environmental expenses must be carefully scrutinized since areas benefitted by drainage may eventually qualify for a subsidy program designed to reduce yields.

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ST. MARY'S RIVER PROJECT -- P.L. 566/SCS

PROPOSED DETERMINATION TO PROHIBIT, OR DENY THE SPECIFICATION, OR THE USE FOR SPECIFICATION, OF AN AREA AS A DISPOSAL SITE

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of Proposed Determination

(Notice No. III-404 CRP-BKW)

I CERTIFY THAT THE ABOVE IS A TRUE AND CORRECT COPY OF THE ORIGINAL NOTICE SIGNED IN THIS MATTER.

Benjamin Kalkstein
ENFORCEMENT OFFICER Region III, U.S. EPA

SUMMARY: Section 404(c) of the Clean Water Act (33 U.S.C. §1251 et seq.) provides that, if the Administrator of the U.S. EPA determines that unacceptable adverse effects on shellfish beds, fishery areas and wildlife would result from the discharge of dredged or fill material, he may exercise his authority to withdraw or prohibit the defined area from specification as a disposal site. In effect, the Administrator would be vetoing a permit issued by the Corps of Engineers. The procedures for implementation of 404(c) are set forth in 40 CFR 231. This notice is being published in accordance with Section 231.3(2) by the Regional Administrator of Region III.

On September 26, 1980, the Corps of Engineers advertised permit application No. NABOP-FR 80-0789 for the impoundment of the upper St. Mary's River. The applicant is the Maryland Department of Natural Resources, Capital Programs Administration, Tawes State Office Building, Annapolis, Maryland 21401. The proposed project site is located in the St. Mary's River and adjacent wetlands, approximately 450 yards north of Maryland Route 471, St. Mary's County, Maryland.

BACKGROUND: Under Section 404 of the Clean Water Act (33 U.S.C. §1251 et seq.) any person who wishes to discharge dredged or fill material into the

waters, including wetlands, of the United States must first obtain a dredge or fill permit from the Secretary of the Army, acting through the Chief of Engineers.

During the public interest review of this permit application, EPA requested that an Environmental Assessment (EA) be performed (October 20, 1980). The request was made because the Corps' public notice did not provide sufficient information. EPA's major concerns were relative to project justification and the inadequacy of the resource assessment.

On December 18, 1980, EPA evaluated the Environmental Assessment (EA) submitted by the Corps. This document, prepared by the applicant, also proved to be inadequate. Subsequently, in response to indications that significant wetland areas would be inundated by project implementation, EPA requested (January 6, 1981) that a wetland inventory be conducted. A January 13, 1981 site inspection by EPA personnel confirmed the presence of an extensive, diverse wetland area that would be destroyed should the proposed project be implemented.

A wetland inventory was submitted by the applicant on February 27, 1981. It was based on the U.S. Fish and Wildlife Service National Wetland Inventory maps of the area. This inventory revealed that at least 111 acres of wetlands were to be destroyed at the project site. The inventory was forwarded to EPA by the Corps on March 11, 1981.

On July 10, 1981, EPA recommended that the Corps' permit authorization be denied. Furthermore, EPA suggested that the project merited the preparation

of an Environmental Impact Statement, pursuant to the National Environmental Policy Act, because of the involvement of Federal permitting authorities and the expenditure of Federal funds. (The project is to be funded largely through the Soil Conservation Service of the U.S. Department of Agriculture.) The original EIS was a two page document, written in 1970, which concluded that "no adverse effects on the environment have been identified." The U.S. Fish and Wildlife Service also recommended denial of permit authorization on July 24, 1981.

EPA staff then initiated an intensive wetland inventory of the entire project area. Aerial survey and photographic analysis, followed by field evaluations were performed during March through June of 1982. These field exercises revealed a wetland system that is much more complex and diverse than had been indicated earlier. The wetland area also proved to be more extensive than previously estimated. EPA estimates that at least 170 acres of wetland would be destroyed by the project.

Proposed mitigation measures for the project were evaluated at this time and these measures were determined to be inadequate for replacement of the extensive, high quality wetlands that now exist at the project site.

The Corps of Engineers held a public hearing on September 7, 1982. Testimony was given at the hearing by representatives of the Soil Conservation Service, the Department of Natural Resources and local citizens. Subsequent to the public hearing the District Engineer decided to issue the permit, and notification of intent to issue was forwarded to EPA on September 28, 1982. Accordingly, on September 29, 1982, the Regional

Administrator notified EPA headquarters of his intention to elevate the permit decision to higher authorities at EPA and the Corps, renewing Region III's objections to issuance of permit NABOP-FR 80-0789. Pursuant to the EPA-Corps memorandum of agreement, EPA headquarters submitted a 404(q) referral to the Assistant Secretary of the Army on October 27, 1982. The COE granted limited acceptance of the elevation and agreed to investigate only the mitigation issue. On January 28, 1983 the Corps notified EPA that the permit would be issued, notwithstanding EPA's objections. The permit was forwarded for signature to the State of Maryland, at which time the Chesapeake Bay Foundation filed suit against the Corps of Engineers to enjoin permit issuance.

On May 17, 1983, the permit was accepted and endorsed by the State of Maryland. On May 27, 1983, EPA Region III prepared to initiate 404(c) proceedings by notifying the Corps of Engineers of the Region's intent to issue a public notice of a proposed determination to prohibit or deny the specification, or use for specification as a disposal site of the area covered by the proposed permit No. NABOP-FR 80-0789. The Corps had 15 days to respond to EPA's letter of intent to prohibit implementation of the St. Mary's impoundment site as a disposal area through Section 404(c) proceedings. However, on June 10, 1983, a 7 day comment time extension was requested by the Corps and verbally granted by EPA. The Corps response, dated June 21, 1983, acknowledged the 404(c) action undertaken by EPA, and placed the Maryland DNR permit in an inactive status until the resolution of the 404(c) proceeding. On June 23, 1983, the Soil Conservation Service (SCS) issued a notice of intent to supplement the previous EIS concerning the St. Mary's Watershed. SCS expects to have a draft EIS completed by

October 1, 1983. EPA will consider the supplemental EIS associated with the project prior to making final its 404(c) determination. Normally, at the conclusion of the public comment/public hearing period, the Regional Administrator will decide whether to recommend that the determination be made final by the Administrator or to withdraw the proposed determination. However, Region III will reopen the comment period to evaluate all information, including the supplemental EIS, prior to its 404(c) determination. In the event the applicant or the project sponser decides not to proceed with the project, the Regional Administrator will withdraw the proposed determination. If the proposed determination becomes final by action of the EPA Administrator, it will prevent the subsequent discharge of fill material at this site.

Impoundment of the upper St. Mary's River under proposed permit No. NABOP-FR 80-0789 would have an unnecessary and unacceptable adverse impact on the fisheries, shellfisheries, wildlife, and wetland resources of the St. Mary's River Watershed. Palustrine wetland losses caused by the inundation of wetlands on the project site and by the isolation of other upstream wetland areas from the estuarine processes of the St. Mary's River Watershed total approximately 344 acres. Those losses of wetland values, combined with the estimated 198 acres already destroyed or isolated by a nearby (SCS/MD DNR) impoundment, will account for the elimination of 57% of the watershed's palustrine wetland resource.

PURPOSE OF THE PUBLIC NOTICE

Region III would like to obtain public comments on whether or not the

impacts of the impoundment of an ecologically contributing wetland system represent an unacceptable adverse effect as described in 404(c) of the Clean Water Act. Any interested persons may submit written comments on the proposed determination. Comments should be directed to whether the proposed determination should become the final determination or whether corrective action could be taken to reduce the adverse impact of the discharge. All such comments will be considered in preparing the recommended determination. Any interested person, affected land owner, or permit applicant or holder may request a hearing by submitting a written request during the public comments period. All comments and/or requests for a hearing should be submitted no later than 60 days from the date of this notice, to Karen M. Wolper, Records Clerk, Wetlands Review Section (3WM13), Environmental Protection Agency, Region III, 6th and Walnut Streets, Philadelphia, Pennsylvania 19106, (215) 597-3357.

FOR FURTHER INFORMATION CONTACT:

KAREN M. WOLPER, RECORDS CLERK
WETLANDS REVIEW SECTION (3WM13)
ENVIRONMENTAL PROTECTION AGENCY, REGION III
SIXTH AND WALNUT STREETS
PHILADELPHIA, PA 19106
(215-597-3357)

Interested persons may obtain additional information including copies of the proposed determination.

Dated: September 1, 1983

Thomas P. Eichler

Thomas P. Eichler
Regional Administrator
Region III

Senator FOWLER. We now have Mr. Donald Vonnahme and Mr. James Kirie. Mr. Vonnahme is the Director of the Division of Water Resources in the Illinois Department of Transportation in Springfield. Mr. Kirie is chairman, Committee on Finance, board of commissioners, Metropolitan Sanitary District of Greater Chicago. Welcome.

STATEMENT OF DONALD R. VONNAHME, DIRECTOR, WATER RESOURCES FOR THE ILLINOIS DEPARTMENT OF TRANSPORTATION, ACCOMPANIED BY NEIL FULTON, STATE DIVISION OF WATER RESOURCES

Mr. VONNAHME. Thank you, Mr. Chairman.

Senator FOWLER. You may proceed as you would like. I would ask, if you could summarize your testimony.

Mr. VONNAHME. Very well, Mr. Chairman.

Senator FOWLER. I will listen very carefully, more carefully to a summary than I will the recitation; but all of your testimony and accompanying documents will be made a part of the record, so that we will have them in full.

Mr. VONNAHME. Thank you, Mr. Chairman.

My name is Don Vonnahme. I am the Director of the Illinois Division of Water Resources. I am also the Chairman of the Governor's State Water Plan Task Force in Illinois, and I am testifying here today as the Illinois lead agency in the formulation of the Lower Des Plaines watershed plan.

As Senator Dixon spoke previously here, we have been in plan formulation for about 10 years in the Chicago metropolitan area; and the effort there we think is exemplary in the United States. I have just finished a term as the chairman of the Interstate Conference on Water Policy, which is essentially the 50 water directors of the United States, and the rapport, the degree of cooperation that we've established in Chicago on the pursuit of floodwater planning has been sort of pilot in nature; it has been copied quite a bit around the country—your own State also.

In this particular area, Mr. Chairman, we started a good 10 years ago to deal with all of the flood problems in the Chicago metropolitan area. That is essentially a six county area. This plan is one of eight, shown in some of our records here.

This was not done in a normal manner. I think what I want to stress today is we are not just here asking for Federal help, and sitting on our duffs until the Federal Government does something. We think that we have really got out front and participated.

We formed a planning and designing committee, not only using the Federal Government's engineers, but also using the engineering and planning staff of the Sanitary District and of my own division; and in fact the State itself has put about $5 million into the design and planning effort over the years; so we are not sitting on our tail, just waiting for something to be done here. I will develop a few bigger numbers for local participation here.

One of the things that you asked earlier was, that you were concerned about the use of these type of moneys for the design and construction of flood control projects in urban areas. We in Illinois essentially can deal with two agencies. There are really three Fed-

eral flood control agencies; the Bureau of Reclamation in the Department of Interior, the Department of Agriculture, and the Army Corps of Engineers. In Illinois, we can use either the Department of Agriculture or the Corps of Engineers.

The Department of Agriculture we use for small watershed projects, and again, it is our understanding of the law that these projects can be either urban or rural; but we use the Department of Agriculture for the smaller projects; the Corps of Engineers for the large projects.

The case in point, on the Des Plaines River here, I think the Senator referred to our flood problem last fall; we experienced about $35 million in damages. We noticed that in areas where we had regulated in the past—again we have bitten the bullet, and do run a very strict regulatory program to prevent the existing flood damages from getting worse—no damages were experienced. However, we noticed that we still had main stem damages on the Des Plaines River.

The plan that is before you now essentially controls flooding on the tributaries to the Lower Des Plaines River. The Corps of Engineers was immediately requested to help us solve the problem on the big main stem, which has a drainage area much larger than this tributaries plan that is before you here today.

So that is essentially how we have worked in the State, Senator, if it is a small watershed project, we go to the Federal Government, though the Department of Agriculture; and if it is a large one, we seek assistance through the Army Corps of Engineers.

Senator FOWLER. How do you define, in your mind, the difference between a small project and a large one?

Mr. VONNAHME. Generally—I have not read P.L. 566 in a long time, but it has some upper limits on the size of watersheds, and as long as we are below that——

Senator FOWLER. Including dollar amounts, or in terms of topography and things like that?

Mr. VONNAHME. Initially we seek it on topography, because until we get into the process, we do not know what the costs of improvements may be, so it is basically determined on geographics, topographics.

Senator FOWLER. Did you go to the Corps with this project initially?

Mr. VONNAHME. Yes.

Senator FOWLER. The local sponsors?

Mr. VONNAHME. When we initially started it, I was not a member of State government at that time; I had a split in service. However, when they were getting ready to do the plans in the area, we solicited both the guidance and advice of the Army Corps of Engineers and Agriculture. At that time, the Corps did not appear to be interested in it, since it was a majority of smaller watershed projects here, and the Department of Agriculture did.

We also solicited the advice of our Governor and our own Department of Agriculture at the State level. What we do there is, each year, since I do chair the State Water Plan Task Force, I make sure that the Governor and our own director of the Department of Agriculture, a sister agency, know what we are doing as far as the use of U.S. Agriculture funds. So we make sure that in the State of

Illinois that there is a good balance between flood control structural projects and sediment and erosion control projects.

Another part that is not in my prepared testimony, Mr. Chairman, we were saying that the typical responsibilities of the U.S. Department of Agriculture should be in sediment and erosion control, and why are we not doing something about that? That is a very large proportion of this project, in the nonstructural side of the overall plan.

I would also like to let you know that as part of our State water planning effort in Illinois, sediment and erosion control is identified as the number one water resources problem. The Governor, through our Department of Agriculture, is putting up $25 million here to attempt to lessen that problem within our State. So we recognize it as a problem, too, but we are not only waiting for Federal funds to do it; what I hope to put before you today is that we bit the bullet and we are willing to put up the dollars ourselves.

I, as a State flood control official, run programs similar to this, and I always, when I come into budgetary decisions, lend a lot more credence to local communities, municipalities, counties who are willing to put something into it when they come asking me for money rather than just asking me to fund it completely.

As part of the testimony, I think we have shown that just as part of this Lower Des Plaines effort right now, that my division, through the State, has put in about $5 million, the Sanitary District has put in about $6.9 million, and the local forest preserve district has put in about another $2 million. So there is about $13.9 million of effort toward getting this plan to go already without any Federal dollars coming in.

In addition, I would not want you to think that the State is lax in not pursuing flood control structural improvements on our own. In that particular watershed over about the last decade, I have built about $18 million worth of projects that are not part of the Lower Des Plaines plan, but they do affect flooding on the basin.

So in those terms, I want you to know that we are not asking without being willing to put something of our own up front. We think that we have done it in a very equitable manner.

Senator FOWLER. Are there any other small watershed projects currently authorized in the Chicago area?

Mr. VONNAHME. Yes. We have Little Calumet authorized, and Upper Salt Creek authorized, and we're working with the Corps of Engineers on the North Branch of the Chicago River right now. That was originally an SCS watershed project.

Senator FOWLER. What is their principal purpose?

Mr. VONNAHME. Flood control.

Senator FOWLER. Urban flood prevention?

Mr. VONNAHME. Yes.

Senator FOWLER. Have you got any other watershed projects that you are currently contemplating?

Mr. VONNAHME. The watershed work plan for the entire Chicago metropolitan area includes work on eight watersheds, plans for eight watersheds. This being one, the Little Calumet being another, Upper Salt Creek being another, North Branch of the Chicago River being another, Cal-Sag being another, Fox River. There is a total of eight I have to get up to, I am trying to remember.

Senator FOWLER. What I am asking you is, are those that are underway, either by the State or the Sanitary District, do you contemplate these under the Small Watershed Program?

Mr. VONNAHME. Yes. The two that are underway now, the Little Calumet and the Upper Salt Creek again are the same type program, under P.L. 566, or the U.S. Department of Agriculture. And in each case the primary non-Federal sponsors are the Sanitary District and the State of Illinois. I think on the Little Cal we have about 35 communities involved; and all the communities share in the operation and maintenance for various portions of the project that are in their areas.

Again, Mr. Fulton and Mr. Kirie advise me, too, that in those areas even though we call it the Chicago metropolitan area, significant amounts of agricultural areas still exist. I don't have a figure. Perhaps when Agriculture testifies, they may be able to tell you that the area is not devoid of agricultural efforts.

Senator FOWLER. Well, I do wish you would submit that for the record, whatever you see as the projected benefits of this program to agriculture.

[The material was subsequently received and follows:]

Illinois Department of Transportation
Division of Water Resources
2300 South Dirksen Parkway/Springfield, Illinois/62764

January 15, 1988

Committee on Agriculture, Nutrition, and Forestry
Subcommittee on Conservation and Forestry
United States Senate
328A Russell Senate Office Building
Washington, D.C. 20510-6000

Gentlemen:

This information is supplemental to our testimony of June 17, 1987 on the Lower Des Plaines Tributaries Floodwater Management Plan. The following are the answers to the remaining questions.

Question: What are the benefits to agriculture of the Little Calumet and Lower Des Plaines Tributaries Floodwater Management Plans and other similar plans in Illinois.

Answer: The following chart shows the total average annual benefits and annual agricultural benefits of 11 current or recent Soil Conservation Service projects in Illinois.

WATERSHED	TOTAL ANNUAL AVG. BENEFITS	ANNUAL AGRICUL. BENEFITS
1. Spring Lake	$ 126,800	$ 126,800
2. Lower Des Plaines	$8,164,400	18,100
3. Little Calumet	7,608,000	108,000
4. Upper Salt	7,533,900	80,600
5. Ash Loop	76,600	76,600
6. Mill Creek	836,600	326,300
7. Kincaid Lake	160,600	160,600
8. Raccoon	147,400	147,400
9. Lick Creek	371,200	371,200
10. Lake Mattoon	110,300	110,300
11. Little Cache	230,900	230,900
TOTAL	$25,366,700	$1,756,800

Question: How should benefits to agriculture be handled within the small watershed program?

Answer: This is an issue we are currently discussing with national groups involved in urban and rural flood control and expect to develop a position on this issue within the next few months.

I trust this information is adequate to complete the record.

Sincerely,

A/E 1-15-88
DRE

Donald R. Vonnahme
Director

Mr. FULTON. Mr. Chairman, if I may respond to a question you asked several minutes ago of Mr. Vonnahme, how the decision is made on which agency to use. In the P.L. 566 program the policy, as I understand it, has been that there is an upper limit of size of the watershed to be constructed under that program, of 250,000 acres. So that sort of puts an up-size limit on what is an urban project and a small watershed project.

The Corps of Engineers has a regulation. It is codified at 33 CFR 238.6 which prohibits them from participating in small watershed projects. That decision was made by the Office of Management and Budget back in 1979, and it was codified in 1980.

Senator FOWLER. Mr. Vonnahme said that they—I think his words were that when he went to see the Corps, they did not seem to be interested. Did they specifically cite the law, their interpretation of the law when they turned down the project?

Mr. FULTON. That initial decision was made in 1972. The codification of this regulation was in 1980. So this regulation was not on the books at the time that decision was initially made.

Senator FOWLER. Would it make any difference to you if in all of our wisdom—in quotes—we transferred this project from Agriculture to the Corps?

Mr. VONNAHME. It would to me, Mr. Chairman, for the following reason. Basically, it would have inherent delay. That same thing was done with our North Branch project, the North Branch of the Chicago River. That was originally formulated under the P.L. 566 program, but then transferred to the Corps of Engineers for implementation on similar thinking.

The problem is that the decision was made to do that in 1976 and we still don't have construction going on in that watershed. My problem with this is that you'll see from our written testimony that we are experiencing annual average damages at the rate of about $10 million. I cannot see that a shift from the SCS to the Corps on this project would be any different than what was attempted on the North Branch, and in a 10-year delay we will experience about another $100 million of flood damage. I just do not think that is an appropriate thing to do.

My own feeling is that this project was authorized for planning back in 1978; and we have been putting good, hard-earned State dollars and staff time into the formulation of the project in securing the non-Federal responsibilities that are required. I just do not support changing Federal agencies this late in the ball game. I speak as a State administrator.

Mr. FULTON. It seems that there are two issues; one is what to do with this particular program, the policy from the standpoint of what the Small Watershed Program is going to produce, and the second is what to do with the particular project before the committee.

I think it is our hope that we will treat them separately; and since there was a commitment made in 1978, that this project should be authorized. We are quite prepared, the State of Illinois, and in our participation in national organizations to address the policy issues of whether there ought to be a certain set of benefits in the Small Watershed Program. The committee that has the jurisdiction for some of the small watersheds program, the Commit-

tee on Environment and Public Works, in a bill last year included a provision that a certain portion of benefits would have to accrue to agriculture. That was in Public Law 99-662; so that is a policy direction that we can work with in the future.

Senator FOWLER. What percentage of this cost, for instance, would go to erosion control?

Mr. VONNAHME. Let's see. I think about $1.7 million, out of a total Federal investment of about $33 million.

Mr. FULTON. That is a number from the standpoint of technical assistance.

Mr. VONNAHME. That is correct.

Mr. FULTON. The real cost for soil erosion control under this program will be much greater, because a lot of it will be borne by local government. What we have been doing, because this program was being done under the Small Watershed Program, we have been working with those units of local government over the last 5 to 8 years to get them to enact erosion control ordinances; and most of the municipalities and counties within this watershed have done that. Certain costs will go to developers and others who are doing construction or doing farming within that region. That cost is really laid off on those that are disturbing the soil. We have gotten a good response from the locals on that.

The State of Illinois has also been very involved with developing manuals for erosion control. This is a very important problem; and the manuals developed in Illinois have been used as a nationwide example of what can be done to establish an erosion control.

Senator FOWLER. Well, I am very anxious to get my request of both the projected benefits and costs to agriculture and all of its dimensions, for obvious reasons.

[See page 56 for projected benefits.]

Mr. VONNAHME. I would like to make one more statement. On the sediment and erosion control, the part that is not costed or evaluated in the plan is our own stream preservation program, which is being administered by my own agency, and each and every one of the municipalities in the watershed; takes care of about 116.3 miles of streams.

The idea here is to preserve and enhance the flood carrying capacity of the streams by maintenance. Also, a part of the program is preventing and eliminating a lot of bank sloughing. The stream preservation program is not included in costs as far as the Federal responsibility is concerned. That cost is going to be entirely borne by the State and locals; so we do not get any dollars back, if you will, but there is a very definite commitment, through formal memorandums of agreement, to address that problem.

[The prepared statement of the State of Illinois, submitted by Mr. Vonnahme, and "Our Community and Flooding," a report on the status of floodwater management in the Chicago metropolitan area, 1987, prepared by the Resource Coordination Policy Committee, follows:]

STATE OF ILLINOIS
TESTIMONY ON THE LOWER DES PLAINES TRIBUTARIES WATERSHED PLAN
SENATE AGRICULTURE COMMITTEE
June 17, 1987

Last fall northeastern Illinois suffered a devasting flood along the Des Plaines River. Thousands of Illinois residents were forced to leave their homes. Businesses closed their doors, unable to assist customers. Traffic was unable to move, costing the region millions in lost commerce. The flood cost Illinois residents $35 to 40 million in residential, commercial and industrial property losses.

At the time of the flood, a plan to address overbank flooding in the lower portions of that watershed was here in Washington awaiting Federal approval. I am here today to request that this committee move this important plan forward to implementation before such a disaster may reoccur.

The Lower Des Plaines Tributaries Watershed Plan encompasses an area of 381 square miles, home to 1.2 million residents in 68 municipalities. Within the watershed, floodwater damages now average $10.3 million annually. The recommendations of this Plan will reduce the annual damages by $6.7 million, benefitting 21,000 acres of flood prone lands, 2497 residents and 203 businesses and public buildings.

In the past twenty years, this watershed has been one of the most rapidly developing watersheds in the nation. The overbank flooding problems are enormous. Businesses experience $850,000 in flood damage in an average year. Traffic losses alone amount to $2.1 million annually. The industries of the region experience average damages of $3.5 million. The damage to homes and home contents total $3.9 million. All together, the residents of this watershed experience average annual flood damages totalling $10.3 million.

The Plan has been carefully prepared by a remarkable effort of local, State and Federal cooperation. In place of the normal Federal-only technical planning effort that prepares P.L. 566 plans in other locales, our Lower Des Plaines Watershed Steering Committee has brought together planners from the USDA, Soil Conservation Service, the Illinois Department of Transportation's Division of Water Resources, and the Metropolitan Sanitary District of Greater Chicago. Engineers and hydrologists from these agencies were pooled to form a technical planning staff to address the watershed problems in the quickest and most efficient way. That specially created staff worked closely with the local governments to produce this plan so that flooding problems in the entire region could achieve early resolution. When complete, the Plan was approved and signed by its sixteen enthusiastic sponsors including: four Soil and Water Conservation Districts, six cities and villages, two county-wide Forest Preserve Districts, a state agency, a municipal sanitary district and two separate services of the United States Department of Agriculture.

Throughout the planning process, the involvement of interested and affected residents was sought. The Lower Des Plaines Tributaries Watershed Steering Committee sought representation from local citizens, municipal leaders, county government officials, regional planning commissions and environmental group leaders. The committee held meetings at locations throughout the watershed with media coverage and broad attendance.

From a regional perspective, the Chicago Metropolitan Area Council of Watershed Steering Committees has conducted floodwater management conferences annually since 1977. These conferences are opportunities to learn of other watershed effort successes and serve to inform the public.

The Plan's recommendations and its potential impacts were analyzed by numerous interests. Site specific investigations were conducted by the Soil Conservation Service and the U.S. Department of Conservation. The U.S. Department of the Interior, Fish and Wildlife Service, concurred in review of the impact on threatened and endangered species. The draft plan was reviewed by the Illinois State Historic Preservation Office. Over forty agencies and organizations were supplied with copies of the plan and were asked to review and comment. Because the plan also serves as an Environmental Impact Statement, it has been through the rigorous EIS review process.

To accelerate the development of the Final Plan and resolution of the Lower Des Plaines' flooding problems, the State of Illinois and the other local sponsors have demonstrated unusually high levels of financial support. Since 1981, the State has expended $5 million directly toward the development and implementation of specific elements of the Lower Des Plaines Watershed Plan. The Metropolitan Sanitary District of Greater Chicago has expended over $6.9 million, and the DuPage County Forest Preserve District has spent $2 million. We have made these expenditures because we are confident that the investment value is regained by more expedient implementation.

Illinois' support of these recommendations goes beyond the planning level. We have agreed with Secretary Dunlop to a 35 percent non-federal share of the total installation cost. This level exceeds the high cost-sharing ratio required in the 1986 Water Resources Development Act (P.L. 99-662).

Pending federal approval, the Plan's sixteen sponsors have been busy implementing other flood control efforts in the basin. In addition to the expenditures in direct support of the Lower Des Plaines Watershed, the State of Illinois alone has expended an additional $18.5 million over the last decade and a half for land and construction of state flood control projects.

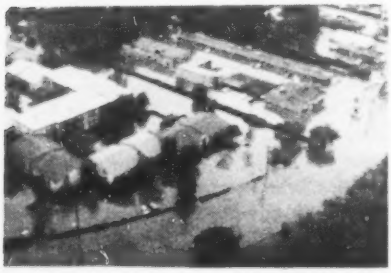
The Lower Des Plaines Tributaries Watershed Plan makes twelve recommendations which will eliminate over 75 percent of the watershed's overbank flooding damages. Most of the land rights for the ten structural projects have already been acquired locally. Of those ten projects, one will be constructed by the State of Illinois, one has been pre-excavated by the local sanitary district and airport authority, and the final plans and specifications for four other projects are being prepared in advance by local governments. The two non-structural elements will be coordinated by the local steering committee and a state agency. The implementation costs of these two programs will be totally borne by the local or non-federal governments.

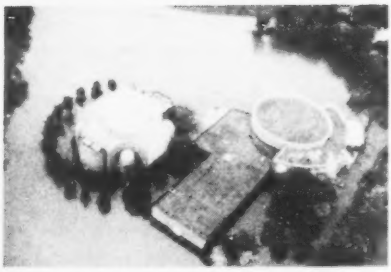
On behalf of the State of Illinois and local sponsors, I urge favorable consideration of the resolution approving this Plan for construction. With your approval, construction can begin and the threat of another devasting flood in this region be averted.

Our Community and Flooding

A Report on the Status of Floodwater Management in the Chicago Metropolitan Area, 1987

Prepared by the Resource Coordination Policy Committee





April, 1987

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Preface

We have a problem in the Chicago Metropolitan Area — flooding.

For years, we have covered the earth with pavement and buildings. Water originally held by the earth was directed by our technical skills to streams which were never designed by nature to carry such volumes. The water directed so cleverly to these outlets rushed over the stream banks and caused the very problem that our technology was supposed to stop — flooding.

In recent years, our community leaders and organizations have worked together to stop existing flood damages and prevent future flood damages from occurring. The original "Our Community and Flooding" prepared in 1975 summarized the watershed plans developed as part of this collective effort.

The purpose of this report is to measure our progress to date and to summarize what remains to be done. Since the rains will continue to come and our communities will continue to grow, the progress of our floodwater management plans is essential to assure that we have communities safe and secure from the hazards of flooding.

The Resource Coordination Policy Committee

The Resource Coordination Policy Committee is composed of floodwater management and related agencies working together to solve our flooding problems. It receives direction and guidance from the Chicago Metro Area Council of Watershed Steering Committees which represents communities and local leaders of each watershed. The agencies include:

- Soil and Water Conservation Districts of North Cook, Lake, DuPage, Kane, South Cook and Will Counties
- Illinois Division of Water Resources
- Metropolitan Sanitary District of Greater Chicago
- U.S. Department of Agriculture Soil Conservation Service
- U.S. Army Corps of Engineers

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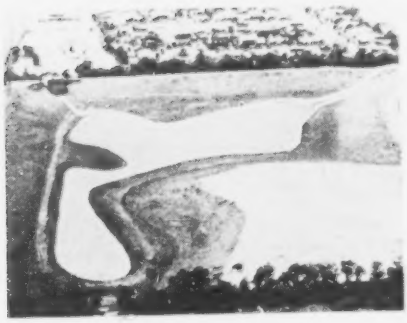


All services are offered without regard to race, color, national origin, religion, sex, age, marital status, or handicap.

PART I – FLOODWATER MANAGEMENT PERSPECTIVE

How Our Flood Problems Developed

Flooding and related problems have been a part of the history of the Chicago area since its earliest days. History records that Marquette and Joliet who first explored this area in 1673 were forced to move their camp because of flooding.

The Chicago Metropolitan Area's location on the southwest shore of Lake Michigan has helped to make it a major national transportation and business center. But the geological features of this location also cause major flood problems.

Glaciation left our area quite flat, particularly the area nearest Lake Michigan which was covered by Glacial Lake Chicago. As a result, stream systems are poorly developed. Undrained areas in the form of wetlands are common and floodplains vary greatly in width. The flatness of our region often means that floodwaters cover large areas. Watersheds draining the area include the Chicago River, North Branch Chicago River, Des Plaines River in Illinois, Little Calumet River in Illinois, Calumet Sag Channel, Poplar Creek, Salt Creek, DuPage River and the Fox River in Illinois.

The rapid population growth since the 1950's caused many municipalities to urbanize areas that are natural floodplains, i.e. those areas next to our streams that flood when their banks overflow. Urbanization of these areas at that time was considered sound economic and political reasoning. It was orderly growth within areas containing public services and utilities.

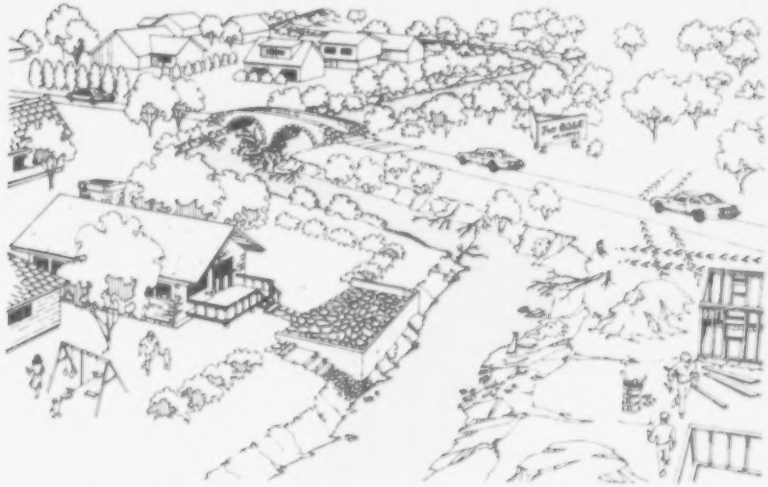
The result of this urbanization has been estimated to cost $22.8 million in average annual floodwater damages affecting 200 communities. This does not include damages within the Central Basin Watershed, which may approach $100 million. It is estimated that a major flood occurrence damages over 18,000 residential buildings and approximately 550 commercial buildings. Also affected are 10 major transportation arteries and 43 secondary traffic routes. Direct damage to highways and bridges is not usually large but major economic losses do occur in the form of associated damages when traffic is disrupted and homes and businesses become inaccessible due to floodwaters.

Many important physical factors serve to increase the frequency and impact of our flooding problem. Poor management of our natural resources is one of these factors. Erosion from areas under development produces sediment which obstructs drainage facilities and reduces the capacity of our streams to convey water. Development of wetland areas also adds to our problem. The natural floodwater storage of these wetlands is lost through filling and the development often drains into storm sewers which speed the runoff to downstream floodplains. The practice of filling floodplains to insure that planned improvements are above past record flood depths is another factor. Filling causes the storm runoff to find other areas to flood, often to the distress of neighbors.

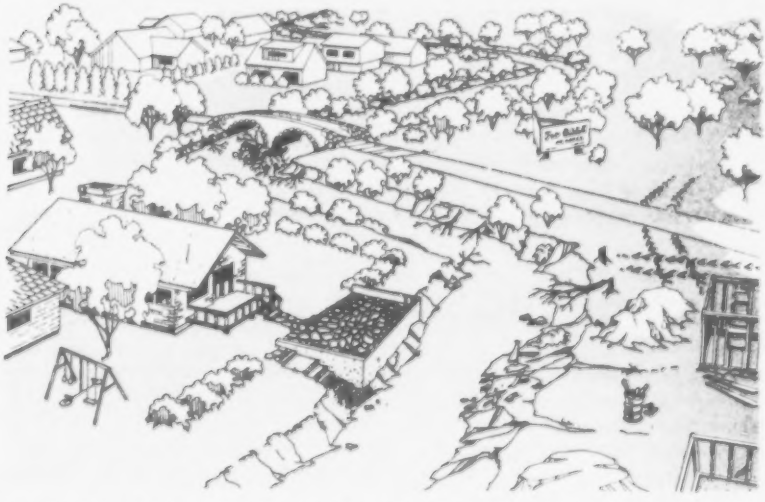
In addition, alterations to stream channels have contributed to the flooding problem. While uncontrolled stream modification may provide flood protection to adjacent areas, the downstream effects have commonly been detrimental. Inadequate bridge openings have also produced adverse effects by restricting the flow of water and causing it to back up. Flooding also occurs because of poor stream maintenance. Heavy vegetation growth and debris accumulations reduce the ability of streams to convey water. Poorly planned development in the floodway and flood fringe areas of a floodplain also creates additional problems.

The area-wide complex flood problem cannot be solved by one agency alone. The solution lies in a coordinated effort throughout the Chicago Metropolitan Area.

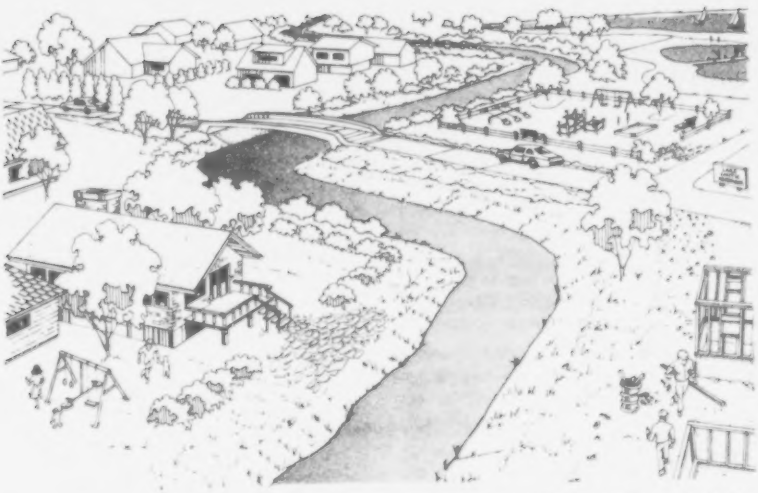
What Floodwater Management is About



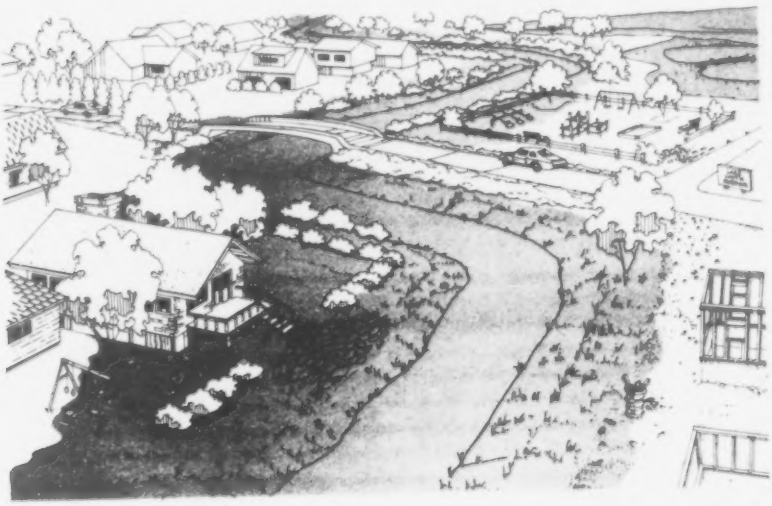
A Floodwater management is achieved by learning what impacts a flood will have, what causes those impacts and how they can be minimized, if not eliminated. The scene above typifies the kinds of things that worsen a flood's damaging effects: projection into the stream; erosion and sedimentation from developing areas; poor maintenance; debris; improper use of land in the floodplain.



B When a flood does occur, poor stream maintenance, construction, planning and development can result in considerable property damage and other negative impacts.



C The same scene is shown here, but with some alterations and additions: a house can be flood-proofed by raising the floor level above flood elevation; the absence of a projection into the stream; a well maintained construction site, stream and stream bank; an elevated roadway and new bridge; a multi-purpose flood control reservoir.

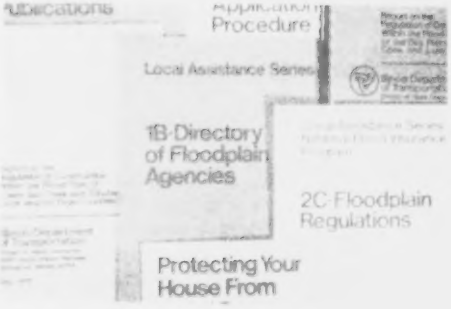


D Again, the flood occurs. It's important to understand that floodwater management does not stop flooding. However, by comparison to the scene on the left, it does reduce damage significantly.

Solutions to the Problem

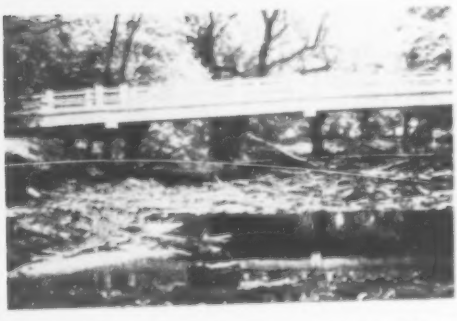
Widespread residential flood damages (left) can be reduced or eliminated by structural measures such as floodwater storage reservoirs (right).

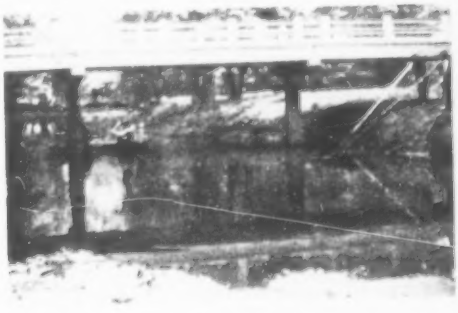
Flood damages to business and industry (left) affect the economic well-being of an entire community. Channel improvements (right) can significantly reduce those damages.



Uncontrolled development in flood-prone areas (left) often causes extensive economic losses affecting an entire community. Non-structural, regulatory actions (right) can greatly reduce these effects.

Besides the loss of valuable top-soil, lack of proper erosion protection measures during and after any construction work will produce sediment (left), a major factor in increased flood levels. Techniques like the sediment trap shown (right) will reduce or eliminate this unnecessary condition.





Man-made and natural debris (left) decreases the ability of a stream to carry water, especially during a flood. Proper maintenance (right) insures efficient floodwater conveyance.

Moving from a flood-prone area is not economically feasible for many who experience periodic flood damage (left). Floodproofing techniques, such as the berm shown (right) can provide protection from floodwaters.

Existing Services and Programs

Many local, state and federal agencies are working together to solve flooding problems in the Chicago Metropolitan area.

Efforts have been made to coordinate activities when appropriate to take advantage of the economies of regional planning. The Chicago Metropolitan Area River Basin Study is an example of such a planning effort.

The study was begun in 1971 when the Metropolitan Sanitary District entered into a cooperative agreement with the Soil Conservation Service to prepare River Basin Plans under authority of Section 6 of Public Law 566, 83rd Congress, as amended — the Watershed Protection and Flood Prevention Act.

Concerned citizens joined local, state and federal agencies to investigate flooding problems in the Des Plaines, North Branch Chicago River, Little Calumet, Poplar Creek, Calumet-Sag and Salt Creek Watersheds. Working under federal guidelines, every aspect of the flooding problem was investigated.

The primary goal of the study was to develop comprehensive plans to reduce existing floodwater damages. The problems and needs in each of the watersheds were considered. As a result, programs and projects were developed which are now being implemented.

Similar studies have been conducted by the Corps of Engineers in the Fox River and DuPage River Watersheds.

USDA Programs (Soil Conservation Service)

The Watershed Protection and Flood Prevention Act (P.L. 566) authorizes the Soil Conservation Service (SCS) to cooperate with local organizations to carry out, maintain, and operate works of improvement for flood prevention, multiple purpose water resource development, and protection of soil resources. Under this authority, floodwater management plans for the six watersheds referenced earlier in the discussion have been developed in cooperation with agencies and steering committees in each watershed. Steering committees are groups of concerned citizens who serve on a voluntary basis. They represent the social, economic, and environmental setting prevalent in their area and have joined together to seek solutions to the flooding problems that confront their communities.

The following goals and assumptions were universally adopted by these committees during preparation of the floodwater management plans:

1. Protect against the flood which occurs on the average of once in 100 years (100 year frequency).
2. Project flooding conditions with urbanization at the year 2,000.
3. Emphasize floodwater retention.
4. Limit analysis to flood damages associated with overbank flooding.
5. Assume that the Metropolitan Sanitary District's Tunnel and Reservoir Plan for the combined sewer areas is in place.
6. Assume that flood control measures which have been authorized and funded are in place.

The final plans developed are a combination of structural and non-structural measures to correct existing flood problems and prevent future problems from occurring. They include reservoirs, channel improvements, dikes, land protection, floodplain regulations, channel maintenance programs, floodproofing and wetland and open space acquisition.

Other SCS Programs

The Soil Conservation Service (SCS) provides technical assistance through Soil and Water Conservation Districts to individual landowners, groups of landowners and communities in programs involving soil, water and related natural resource needs. Summarized, these programs are:

URBAN SOIL EROSION AND SEDIMENTATION CONTROL PROGRAM: Assists governmental units in developing and implementing soil erosion and sedimentation control programs in urbanizing areas. This includes training and assistance in developing soil erosion and sedimentation control ordinances, site development plans and on-site help to communities, developers and consultants.

SOIL SURVEYS: The soil survey provides information about soils and their limitation and potential for housing, recreation, septic filter fields, agriculture and many other uses.

ASSISTANCE TO RURAL LAND OWNERS AND OPERATORS: SCS helps farm owners and operators in planning resource management systems and applying conservation practices to the land. These practices include conservation tillage, contour farming, terraces, structures, grass waterways, pasture planting and management, and woodland planting and management.

U.S. Army Corps of Engineers

House Public Works and Transportation Committee and Senate Environment and Public Works Committee resolutions and specific legislation provide basic authorization for survey investigations and other feasibility studies by the Corps of Engineers. Generally, water resource developments recommended to Congress in response to study authorities may not be implemented without being specifically adopted in law. The majority of the Corps' water resource projects or programs fall into that category. However, Section 201 of the 1965 Flood Control Act, as amended, delegated to the Secretary of the Army the right to administratively authorize water resource developments for which the estimated Federal cost is less than $15 million. Approval by the Public Works Committees is required prior to project implementation. Additionally, subject to specific limits on the allowable Federal expenditures, Congress has delegated continuing authority to the Secretary of the Army acting through the Chief of Engineers for study, adoption and construction of small projects for navigation, flood control, beach erosion control and shore protection as summarized in Table 1. Criteria for design, evaluation and local cooperation (with the added requirement that local interests bear all project costs in excess of the Federal limit, except for Section 111 projects) are the same for these projects as for projects specifically authorized by Congress.

Table 1

Continuing Authority Projects

Authority	Type of Projects for Which Used	Limit of Federal Costs Per Project
Section 3 1945 R & H Act	Snagging and Clearing for Navigation	(2)
Section 14 1946 FC Act (1)	Streambank and Shore Protection for Facilities	$ 500,000
Section 103 1962 R & H Act (1)	Small Beach Erosion Control Projects	2,000,000
Section 107 1960 R & H Act (1)	Small Navigation Projects	4,000,000
Section 205 1948 FC Act (1)	Small Flood Control Projects	5,000,000
Section 208 1954 FC Act (1)	Snagging and Clearing For Flood Control	500,000

(1) As subsequently amended.

(2) A limit per project is not specified; however, in any given year a maximum of $100,000 may be used nationwide.

(3) A project exceeding $1 million will be transmitted to Congress for specific authorization.

Other Corps of Engineers Programs

Section 22 of Public Law 93-251 authorized cooperation with states in the preparation of comprehensive plans for the development, utilization and conservation of the water and related resources of drainage basins located within the boundaries of the state and to submit to Congress reports and recommendations with respect to appropriate Federal participation in carrying the plan. Expenditures in any one state can not exceed $200,000 in any one year.

Corps input to the state planning program is on an effort or service sharing basis in lieu of an outright grant.

The Corps is authorized by Section 206 of the Flood Control Act of 1960; as amended, to provide information, technical planning assistance, and guidance upon request to both Federal and non-Federal entities in identifying the magnitude and extent of the flood hazard and in planning wise use of the flood plains. Direct response and assistance of this kind are provided through the Floodplain Management Services Program at District offices. The Corps also administers studies which provide basic hydrologic and hydraulic information to the Federal Emergency Management Agency on a reimbursable basis under interagency agreement.

Specific Corps Projects

In March 1975, the Corps initiated a study of the Chicago-South End of Lake Michigan Study Area to assess overbank flooding and surface ponding in the area drained by the Des Plaines River and its tributaries, and the area tributary to Lake Michigan. The study area also includes the Chicago Metropolitan Area River Basin and DuPage River. Interim Studies completed include the Lower Des Plaines River, (1980;) DuPage River, (1982); and the I&M Canal, (1986). The Lower Des Plaines and DuPage Rivers interims identified flood problems in the basins but did not recommend Federal participation due to lack of economic justification. The I&M Canal interim study recommended rehabilitation on the McCook levee located on the Des Plaines River. This project is continuing under the Corps of Engineers small flood control authority. The feasibility report which recommended replacement of the existing levee is under review by North Central Division. Following approval of the feasibility report, the Detailed Project Study will be initiated. Preliminary cost of the levee rehabilitation is estimated to be $1,650,000 Federal and $550,000 non-Federal.

As a result of the extensive flooding during September-October 1986, the Illinois Division of Water Resources has requested that the Corps of Engineers initiate a flood control study of the Upper Des Plaines River Basin. This study will be initiated by the Corps following approval to conduct the study under the Chicago-South End of Lake Michigan Authority by the Chief of Engineers. Reconnaissance studies are underway to investigate the flood problems at North View in DuPage County along the East Branch DuPage River under authority of Section 205 of the 1948 Flood Control Act. The reconnaissance report on Valley View is scheduled for completion in May 1987.

The 1976 Water Resources Development Act authorized a Phase 1 General Design Memorandum (GDM) Study for the North Branch Watershed to be performed by the Corps of Engineers. The study investigated the main features of the plan prepared by the Soil Conservation Service in October 1974. The Phase 1 GDM report contains an evaluation of the federal interest in, and the feasibility of, constructing the reservoirs identified in the Plan. The Water Resources Development Act of 1986 authorizes construction of three reservoirs which were recommended in the Phase 1 GDM. See page 17 for details.

A study report for the Little Calumet River in Indiana was completed in December 1973. The Water Resources Development Act of 1976 authorized a Phase 1 advanced engineering design study which directed the Corps to determine the feasibility of implementing a flood damage reduction, outdoor recreation and recreation navigation project along the Little Calumet River in Indiana. The Phase 1 study recommends flood damages reduction improvements along the Little Calumet River between the Illinois-Indiana state line and the Penn Central Railroad bridge in Gary. These improvements in Indiana will be compatible with the authorized flood damage reduction improvements in Illinois planned by the Soil Conservation Service. The Water Resources Development Act of 1986 authorized the recommended plan. The preconstruction engineering and design is underway.

The Corps of Engineers also has authority to study the flooding problems along the Fox River. The final study is scheduled to be completed in 1987. Based on studies completed to date, it appears that modification of the existing McHenry and Algonquin dams is justified based on the potential for reducing flood damages in the Chain-O-Lakes area and the Algonquin pool. Implementation of non-structural flood damage reduction measures in Elgin and unincorporated Kane County also appear justified.

The Corps, with the Metropolitan Sanitary District of Greater Chicago as a local sponsor, has for a number of years conducted a clean-up program on the North Branch Chicago River and the Little Calumet River between the Cal-Sag Channel

and the Illinois-Indiana state line. Debris, trash and vegetation are removed from designated areas along the North Branch Chicago River each year. Debris was removed from the Little Calumet River in 1976. The scope for silt removal from the Little Calumet River has been formulated but at the request of the MSDGC the project is being deferred until completion of the TARP Phase 1 Calumet System. The Water Resource Development Act of 1986 specified future work of the clean-up program on the North Branch and Little Calumet Rivers to be cost shared 50 percent Federal and 50 percent local. The Corps of Engineers is also authorized to participate in future maintenance of the Little Calumet River in Illinois.

Construction is underway on rubblemound offshore breakwaters, riprap revetments, and beach nourishment at ten location along the Chicago Edgewater area of the Lake Michigan shoreline. The project was authorized by Public Law 91-190 to provide flood protection resulting from high lake levels.

At the request of the Governor of Illinois, assistance is being provided under the Advanced Measures provisions of PL 84-99 to provide flood protection along the Lake Michigan shoreline in areas of Edgewater as well as the Rogers Park area in Chicago. Other areas of the Illinois shoreline are also being investigated.

Section 14 projects under investigation for the lake Michigan shoreline include protection at Fullerton Avenue, Temple Emanuel in Edgewater, Meigs Field in Chicago, and a streambank protection investigation on the Fox River in Batavia.

The 1976 Water Resources Development Act authorized a Phase 1 GDM study of the Phase 11 TARP project. Known as the Chicagoland Underflow Plan, details are provided on page 35.

The Corps of Engineers under the authority of Section 205 of the 1948 Flood Control Act is also investigating solutions to urban water damage problems in the Village of Northfield as the result of overbank flooding from the Middle Fork of the North Branch of the Chicago river.

Other Federal Programs

The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 created a flood insurance program administered by the Flood Insurance Administration of the Federal Emergency Management Agency.

The 1968 Act made federally subsidized insurance available to citizens in communities that adopt regulations controlling floodplain development.

The 1973 Act makes flood insurance mandatory as a condition for federally related financial assistance to communities or individuals acquiring or refinancing property or building within the flood hazard area as defined by the program established in 1968.

Federal agencies provide assistance following flood disasters in the form of grants, direct assistance or low interest loans. Participation in the flood insurance program by communities with identified flood hazards assures continued flood relief assistance.

State of Illinois, Department of Transportation
Division of Water Resources Flood Control Planning

The Flood Control Act of July 1945, Ill. Rev. Stat., Ch. 19, Par. 126, a-h, gives the Division of Water Resources legal authority to participate in the improvement of the rivers of the State for the purpose of regulating and controlling flood and low water flows. Criteria followed by the Division relating to flood control planning include:

1. Assurance that the most severely damaged areas receive priority consideration and assistance from State and federal sources.
2. State water resource projects be designed to maximize economic efficiency at minimal environmental impact.
3. State expenditures result in the maximum benefits for the least possible cost.
4. Local interest and investment of funds be required as evidence of involvement in any project.

The Division of Water Resources, in cooperation with local government, has provided over 2,000 acre feet of floodwater storage in eight reservoirs, as well as improved channels at numerous locations throughout the metropolitan area.

The Division participates in federal programs within the legal authority of State Statutes. The Division is an active sponsor, along with other regional and local agencies, of floodwater management plans developed with SCS assistance. Responsibilities include land acquisition needed for the structural measures and implementation of various non-structural programs.

Stream Preservation Program

The Division has assumed responsibility for the development of a stream preservation program as a part of the non-structural program of the Chicago Metropolitan River Basin Plans.

It will include the following goals and objectives:

1. Keep debris, sediment and unwanted vegetation out of the rivers and streams.
2. Safe conveyance of floodwater through each community.
3. Assure that flood control structural measures will perform as planned by maintaining unobstructed inflows and outflows.
4. Provide for annual inspection and maintenance of the key rivers and streams in each watershed.
5. Encourage each community to assume responsibility for the stream portion within its jurisdiction.
6. Provide assistance and advice to communities, when needed, by the Division and other regional agencies.

The program will be implemented and initially coordinated through each respective watershed steering committee as the watershed plans are developed and implemented.

State Floodplain Regulations

The Rivers, Lakes, and Streams Act of June, 1911, Ill. Rev. Stat., Ch. 19, gives the Division of Water Resources the authority to regulate construction activities within the floodway. The floodway is that portion of the floodplain required to store and convey floodwater. A permit is required to construct within the floodway. Construction is prohibited that significantly raises the stage or velocity of the 100 year projected flood in the floodway.

Flood plain maps are available from the Division of Water Resources for the Upper Des Plaines River, the North Branch Chicago River, the Lower Des Plaines River, the Little Calumet River, Poplar Creek, Upper Salt Creek, and Waubansee Creek.

Floodproofing and Flood Insurance Programs

The Division's Local Floodplain Programs Section is the State Coordinating Agency for the National Flood Insurance Program. This section provides advice and information concerning the flood insurance program as well as technical assistance for floodproofing.

Metropolitan Sanitary District of Greater Chicago

The first modification of the natural drainage system in the Chicago Metropolitan area was done by the Metropolitan Sanitary District in the late 1880's. A series of canals were constructed to reverse the flow of the Chicago River and carry waste away from Lake Michigan.

The existing canal systems (Sanitary and Ship Canal, North Shore Channel, and Calumet-Sag Channel) provide a substantial volume of flood control storage. The water level in the waterways can be lowered in anticipation of a storm to provide bank storage of up to 4,600 acre-feet of additional capacity above normal operating water levels.

Flood Control Program

While the Metropolitan Sanitary District of Greater Chicago does not have a specific statutory responsibility in the area of flood control, its involvement and expertise in the areas of water pollution control and drainage has lead the Sanitary District to assume a flood control leadership role in the metropolitan area.

By the mid-1960's, the Sanitary District was involved in the design and construction of many flood control storage reservoirs and stream improvement facilities. Melvina Ditch Retention Reservoir, completed early in 1967, was the first reservoir

constructed. To date, with MSDGC participation, 24 reservoirs have been completed and three more are under construction. These reservoirs range in capacity from 24 to 1,076 acre-feet of stormwater detention and provide relief to thousands of people. All of the reservoirs designed by the Sanitary District will accommodate the largest storm expected to occur in any span of a hundred years.

The maintenance and operation responsibility of approximately one-half of the existing reservoirs has been fully undertaken by the local municipality, while in the remaining reservoirs, the Sanitary District shares this responsibility with a local public entity.

The Sanitary District has sought Federal, State and local participation in its flood control efforts. Today, the Sanitary District is one of the principal sponsors of the floodwater management plans developed by the Soil Conservation Service. These plans address flood control on a regional basis.

The Sanitary District, as a local sponsor of the SCS watershed projects, is generally responsible for the acquisition of land rights and contract administration. Since the inception of this program, the Sanitary District has expended more than $10,000,000 in land rights acquisition for five reservoirs (Structures 2, 3, 4, 5, and 6) in the Upper Salt Creek Watershed, and more than $5,000,000 for three reservoirs (Structures 32, 53, and 143) in the Little Calumet River Watershed. As contracting agent, the Sanitary District has constructed eight reservoirs with SCS funding.

In 1974, the Sanitary District adopted the "Flood Control Program Guidelines" (amended January 1981) which established certain criteria for the Sanitary District's participation in proposed local flood control reservoir projects (projects not addressed in the regional SCS program). These criteria included such items as the requirement for a local sponsor to share the costs of reservoir implementation, a requirement that the proposed reservoir be of at least 100 acre-feet capacity, that the flooding problem be of long standing, and that the project have a favorable benefit/cost ratio. The January 1981 amendment requires a "Strategic Planning Study for Flood Control" to be conducted by the Illinois Division of Water Resources. This State study is required for possible State funding of the project and will be used to define a cost effective project. The cost of a State study is to be borne equally by the local sponsor and the Sanitary District. The Flood Control Program Guidelines ensure that public funds are expended only in situations where serious flooding problems exist and adequate justification of expenditures is made.

Sewer Permit Programs

Since 1972, detention of stormwater runoff has been a requirement of the sewer permits within the service area of the Metropolitan Sanitary District. This area includes most of Cook County. Lake and DuPage Counties have also developed similar ordinances based on the MSDGC regulations.

The intent of the regulations is to require local governments and developers to jointly provide detention storage. This eliminates excessive runoff during heavy storm periods and promotes comprehensive community wide programs for flood control. The MSDGC ordinance requires that the release rate of stormwater runoff from all developments of a certain size not exceed stormwater runoff from the area in its natural undeveloped stage

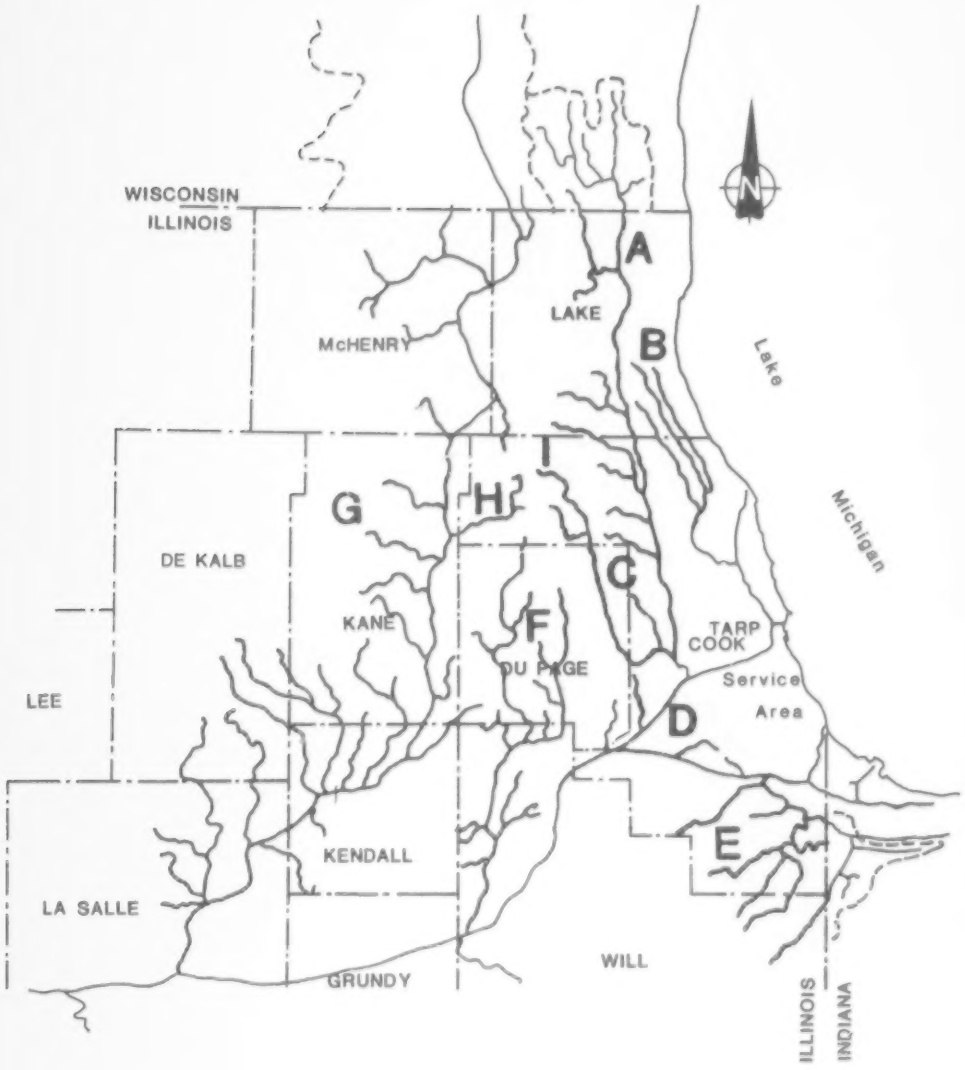
Tunnel and Reservoir Plan (TARP)

The Chicago Metropolitan area has two different methods for collecting sewage. Flood problems in areas serviced by these two systems must be resolved differently. In all areas except the central basin, sewage and storm water are collected separately. These areas are commonly called "separate sewer" areas. Surface flood retention reservoirs, mentioned previously, are provided only in separate sewered areas. In the central basin, sewage and stormwater are collected in the same sewer and the areas served are called "combined sewer" areas. Combined sewer areas comprise 375 square miles of the total 872 square mile area under the jurisdiction of the Sanitary District. Flood and pollution problems in these areas will be served by the Tunnel and Reservoir Plan (TARP). The TARP service area includes the City of Chicago and 51 suburban municipalities.

TARP consists of two phases. Phase I of the Plan is primarily a water pollution control project. Phase II is associated primarily with urban flood control.

Virtually all excess combined sewage will be captured by the ultimate tunnel-reservoir system. In addition, waterway stages will be controlled, eliminating overbank flooding, basement flooding, and the bypassing of raw sewage.

PART II - THE STATUS OF FLOODWATER MANAGEMENT



Watersheds of the Chicago Metropolitan Area

Map Key	Watershed	Area (Sq Mi)	Area Subject To Flooding (Acres)	Length Of Rivers and Tributaries (Miles)	Residences Damaged Annually	Businesses Damaged Annually	Average Annual Damages ($1,000s)	Page
A	Upper DesPlaines River	300	13,000	62	203	11	$283	15
B	North Branch Chicago River	102	5,500	57	1,030	20	$2,995	17
C	Lower DesPlaines Tributaries	381	20,900	188	2,497	200	$10,826	19
D	Cal-Sag Channel	117	1,050	25	175	-	$165	23
E	Little Calumet River	213	10,800	109	6,866	142	$5,835	25
F	Du Page River	353	8,623	129	130	25	$2,890	27
G	Fox River	1,720	Not Available	117 (Main Stem)	3,880	Not Available	$2,700	29
H	Poplar Creek	40	1,525	26	184	28	$125	31
I	Upper Salt Creek	52	1,940	17	1,200	2	$2,393	33
	TOTALS	3,767	64,438	730	16,195	428	$28,212	

Upper Des Plaines River Watershed

Program Status

The Upper Des Plaines River watershed is unique in the Chicago metropolitan area because it is largely rural in character. The floodwater management plan developed for it as part of the Chicago Metropolitan Area Floodwater Management Study focuses on non-structural programs to prevent future damages from occurring. These programs include land acquisition, land protection and floodplain regulations.

Floodwater damages to agricultural land are predominant. However, significant residential and commercial flooding occurs near Russell, Gurnee, and Libertyville.

A reconnaissance study is underway by the Corps of Engineers to investigate the flood problems at North Libertyville Estates under authority of Section 205 of the 1948 Flood Control Act. The study is scheduled for completion in May 1987. Further, the State of Illinois has requested the Corps of Engineers to investigate the flood problem of the Upper Des Plaines River Basin. The reconnaissance study is scheduled to be completed in the Spring 1988.

Land Protection Program

The Lake County Soil and Water Conservation District, assisted by the Soil Conservation Service, provides technical assistance to landowners, and operators in planning and applying resource management systems on land they own or control. In addition, assistance is given to units or government with developing and implementing natural resource protection ordinances.

Agriculture remains the predominant land use in the watershed. Resource management goals in the watershed include conservation tillage systems and grass waterways for soil conservation, improvement of wildlife habitat, natural wetland retention and stream channel preservation.

Seven of the fourteen municipalities within the watershed and unincorporated Lake County presently have soil erosion and sediment control ordinances in various stages of implementation. These municipalities include Grayslake, Green Oaks, Libertyville, Lindenhurst, Mundelein, Thirdlake, and Waukegan.

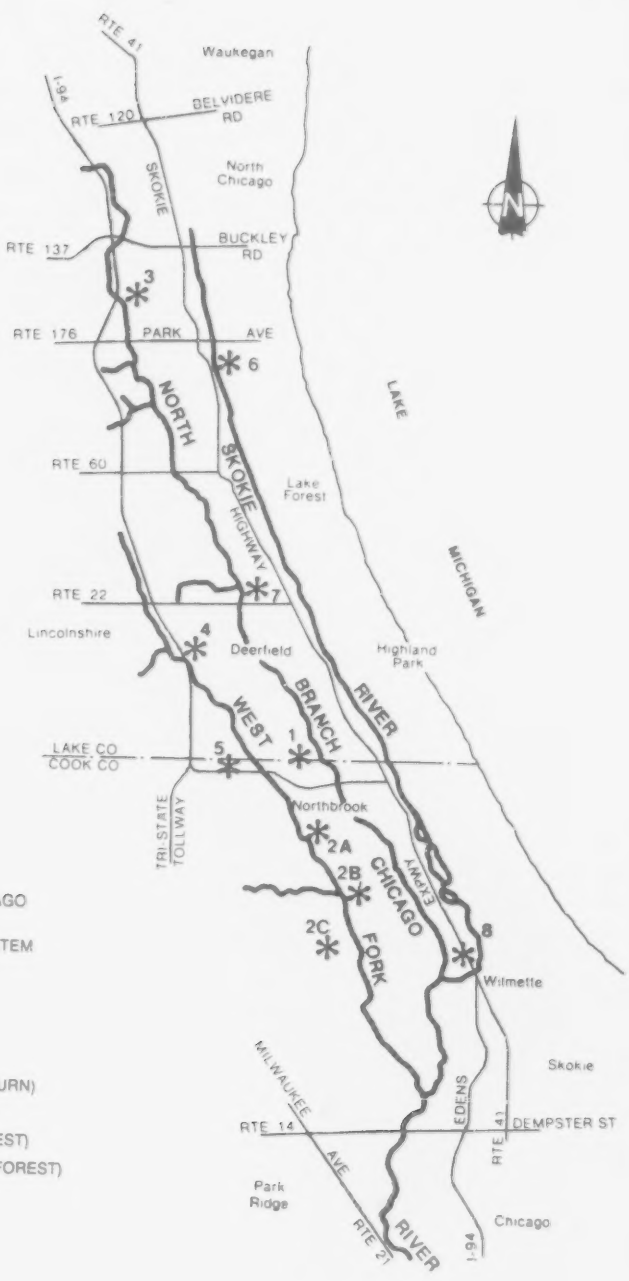
Land Acquisition Program

The Lake County Forest Preserve District has actively pursued a program of open land, wetland and floodplain purchase in the Upper Des Plaines River Watershed. To date, 4,100 acres of land adjacent to the River and its tributaries have been acquired by the District. Only a few parcels remain to be acquired to achieve the District's goal of providing continuous open space along the entire length of the Upper Des Plaines River.

Floodplain Regulations

The Illinois Division of Water Resources regulates the floodways throughout the Upper Des Plaines Watershed in Illinois. Any construction proposed within the floodway areas must be permitted by the DWR and must not have significant adverse impacts.

North Branch Chicago River Watershed



* 1 MIDDLE FORK NORTH BRANCH CHICAGO RIVER RESERVOIR (NORTHBROOK)

2 TECHNY RETENTION RESERVOIR SYSTEM (UNINCORPORATED COOK)
- **2A** NORTHBROOK RESERVOIR
- **2B** TECHNY RESERVOIR
- **2C** GLENVIEW RESERVOIR

3 ATKINSON ROAD RESERVOIR (UNINCORPORATED COOK)

4 DUFFY LANE RESERVOIR (BANNOCKBURN)

5 DEERFIELD RESERVOIR (DEERFIELD)

6 SKOKIE ROAD RESERVOIR (LAKE FOREST)

7 WAUKEGAN ROAD RESERVOIR (LAKE FOREST)

8 WILLOW ROAD DAM MODIFICATION

Projects of the Metropolitan Sanitary District

1 MIDDLE FORK NORTH BRANCH CHICAGO RIVER RESERVOIR (COMPLETED IN 1975)
FLOOD STORAGE: 600 acre-feet
FLOOD PROTECTION TO: Northbrook, Northfield, Glenview, Morton Grove, Niles
COST: Construction – $2,900,000 (MSD)
Land – 22 acres donated by the Homart Corp. (Sears Roebuck Inc.)
$776,000 (Estimated Value)
MAINTENANCE: Homart Corp. and MSD

2 TECHNY RETENTION RESERVOIR SYSTEM (COMPLETED 1979)

2A NORTHBROOK RESERVOIR
FLOOD STORAGE: 300 acre-feet

2B TECHNY RESERVOIR
FLOOD STORAGE: 250 acre-feet

2C GLENVIEW RESERVOIR
FLOOD STORAGE 850: acre-feet
FLOOD PROTECTION TO: Glenview, Morton Grove, Niles
COST: Construction – $3,831,000 (MSD)
Land 180 acres at three separate locations donated by Techny Orders,
$5,280,000 (estimated value)
MAINTENANCE: MSD

Projects Planned by the Soil Conservation Service and Recommended for Construction by the U.S. Army Corps of Engineers and Authorized by Congress

(Preconstruction engineering and design is underway for the following three reservoirs.)

3 ATKINSON ROAD RESERVOIR (STRUCTURE 15)
VOLUME: 500 acre-feet
FLOOD PROTECTION TO: Lake Forest, Unincorporated Lake and Cook Counties
COST: Construction – $4,140,000 (Estimate)
Land – $427,400 (DWR)

4 DUFFY LANE RESERVOIR (STRUCTURE 27)
VOLUME: 525 acre-feet
FLOOD PROTECTION TO: Lincolnshire, Bannockburn, Deerfield
COST: Construction – $5,422,000 (Estimate)
Land – $945,000 (DWR),
$61,500 (Lake Co. FPD)

5 DEERFIELD RESERVOIR (STRUCTURE 29A)
VOLUME: 575 acre-feet
FLOOD PROTECTION TO: Deerfield, Northbrook, Glenview
COST: Construction – $4,354,000 (Estimate)
Land – $250,000 (DWR) $750,000 (Deerfield)

Projects of the Division of Water Resources

6 SKOKIE ROAD RESERVOIR (STRUCTURE 4)
VOLUME: 1,800 acre-feet
FLOOD PROTECTION TO: Lake Forest, Unincorporated Cook
COST: Construction – $10,500,000 (Estimate DWR)
Land – DWR and Lake County Forest Preserve District $958,300

Projects Planned by the Soil Conservation Service but Not Recommended for Construction by the U.S. Army Corps of Engineers

7 WAUKEGAN ROAD RESERVOIR (STRUCTURE 18)
VOLUME: 2,068 acre-feet
FLOOD PROTECTION TO: Bannockburn, Highland Park, Deerfield
COST: Construction – $10,156,000 (Estimate)
Land – $2,033,300 (DWR and Lake County Forest Preserve Dist.)

8 WILLOW ROAD DAM MODIFICATION
PURPOSE: Two automatic control gates to improve the flood control featuree of the lagoon.
FLOOD PROTECTION TO: Northfield, Wilmette, Glenview, Niles, Morton Grove
COST: Construction – $130,000 (Estimate)

Program Status

Federal Funding Status

The 1986 Water Resources Development Act authorized construction of reservoirs 3, 4, and 5 for the North Branch Watershed to be constructed by the Corps of Engineers. The preconstruction engineering and design is underway with construction initiation scheduled for 1988.

Land Protection Program

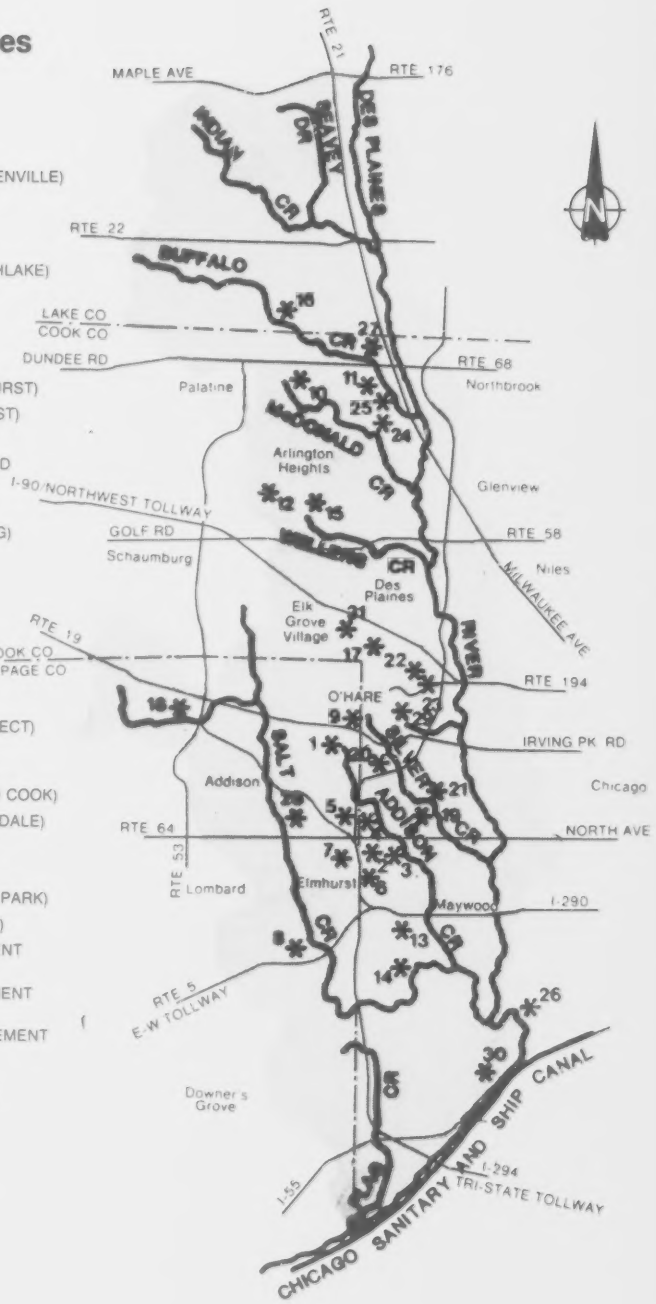
Soil erosion and sedimentation control ordinances have been enacted in the communities of Glenview, Lake Forest, North Chicago, Waukegan, Gurnee, Green Oaks, Bannockburn, and unincorporated Cook and Lake Counties.

The Lake County and North Cook County Soil and Water Conservation Districts are providing technical assistance. The land protection programs are presently being evaluated by the Districts to determine their effectiveness and to make recommendations for improving them if necessary.

Floodplain Regulations

The Illinois Division of Water Resources regulates the floodways throughout the North Branch Chicago River Watershed in Illinois. Any construction proposed within the floodway areas must be permitted by the DWR and must not have significant adverse impacts.

Lower Des Plaines Tributaries Watershed



1 WILLIAM REDMOND RESERVOIR (BENSENVILLE)

2 GENE DOYLE DETENTION RESERVOIR (NORTHLAKE)

3 LAKE STREET CULVERT

4 RAILROAD AVENUE RESERVOIR (NORTHLAKE)

5 ARLINGTON CEMETERY RESERVOIR (NORTHLAKE)

6 LOWER ELMHURST RESERVOIR (ELMHURST)

7 YORK ROAD, I-90 RESERVOIR (ELMHURST)

8 SALT CREEK CHANNEL IMPROVEMENT

9 BENSENVILLE DITCH IMPROVEMENT AND RESERVOIR

10 WHITE PINE DITCH RESERVOIR

11 HERITAGE PARK RESERVOIR (WHEELING)

12 WILKE-KIRCHOFF RESERVOIR (ARLINGTON HEIGHTS)

13 HILLSIDE RESERVOIR (HILLSIDE)

14 MAYFAIR RESERVOIR (WESTCHESTER)

15 MT. PROSPECT RESERVOIR (MT. PROSPECT)

16 BUFFALO CREEK RESERVOIR (UNINCORPORATED LAKE & COOK CO.)

17 O'HARE RESERVOIR (UNINCORPORATED COOK)

18 SPRING BROOK RESERVOIR (BLOOMINGDALE)

19 NORTHLAKE RESERVOIR (NORTHLAKE)

20 SILVER CREEK RESERVOIR (CHICAGO)

21 FRANKLIN PARK RESERVOIR (FRANKLIN PARK)

22 WILLOW HIGGINS RESERVOIR (CHICAGO)

23 WILLOW HIGGINS CHANNEL IMPROVEMENT (ROSEMONT)

24 McDONALD CREEK CHANNEL IMPROVEMENT (PROSPECT HEIGHTS)

25 BUFFALO WHEELING CHANNEL IMPROVEMENT (WHEELING)

26 RIVERSIDE LAWN DIKE (RIVERSIDE)

27 BUFFALO WHEELING CHANNEL BRIDGE REPLACEMENT (WHEELING)

28 KINGERY WEST LEVEE (ADDISON)

29 LAKE O'HARE RESERVOIR (CHICAGO)

30 McCOOK LEVEE REHABILITATION

31 CUP O'HARE RESERVOIR

Projects of the Division of Water Resources

1 WILLIAM REDMOND RESERVOIR
(COMPLETED IN 1977)

VOLUME: 685 acre-feet
FLOOD PROTECTION TO: Bensenville, Broadview, Northlake, Stone Park, Bellwood
COST: Construction – $4,588,000 (DWR)
Land – $132,000 (Bensenville) $83,000 (DWR)
MAINTENANCE: Bensenville

2 GENE DOYLE DETENTION RESERVOIR
(COMPLETED IN 1979)

VOLUME: 70 acre-feet
FLOOD PROTECTION TO: Northlake
COST: Construction – $1,373,000 (DWR)
Land – $165,000 (DWR)*
MAINTENANCE: Northlake

3 LAKE STREET CULVERT (FIRST STAGE COMPLETED IN 1973)

PURPOSE: Improve drainage in the residential area from Addison Creek to Lake Street and Mannheim Road.
FLOOD PROTECTION TO: Northlake, Melrose Park, Stone Park
COST: Construction – $1,025,000 (DWR)
$2,644,000 (Division of Highways)
Land – $58,000 (DWR)*
MAINTENANCE: Northlake

(SECOND STAGE COMPLETED IN 1979)

PURPOSE: Improve the drainage in the residential area along Lake Street from Railroad Avenue to Mannheim Road
FLOOD PROTECTION TO: Northlake
COST: Construction – $1,625,000 (DWR)
$2,644,000 (Illinois Division of Highways)

4 RAILROAD AVENUE RESERVOIR
(COMPLETED IN 1981)

VOLUME: 47 acre-feet
FLOOD PROTECTION TO: Northlake, Addison Creek Communities
COST: Construction – $645,000 (DWR)
Land – $215,000 (DWR)*
MAINTENANCE: Northlake

5 ARLINGTON CEMETERY RESERVOIR
(COMPLETED IN 1981)

VOLUME: 71 acre-feet
FLOOD PROTECTION TO: Addison Creek Communities, Northlake
COST: Construction – $779,000 (DWR)
Land – $362,000 (DWR)*
MAINTENANCE: Elmhurst

6 LOWER ELMHURST RESERVOIR

VOLUME: 104 acre-feet
FLOOD PROTECTION TO: Elmhurst, Berkeley
COST: Construction – $1,300,000 (Estimate, 1986)
Land – Presently in public ownership (Estimated value $10,000)*

7 YORK ROAD, I-90 RESERVOIR (COMPLETED IN 1979)

VOLUME: 20 acre-feet
FLOOD PROTECTION TO: Elmhurst
COST: Construction – $119,000 (Elmhurst)
$202,000 (DWR)
Land – Presently in public ownership (Estimated value $10,000)
MAINTENANCE: Elmhurst

*Combined Land cost–local participation Northlake, $65,000; Melrose Park, $44,000; Stone Park, $50,000; Bellwood, $30,000; Elmhurst, $190,000; Broadview, $7,000; Westchester, $14,000; Addison Creek Conservancy District, $68,000; Leyden Township, $70,000; Addison Township, $25,000.

8 SALT CREEK CHANNEL IMPROVEMENT

16,100 foot channel improvement of Salt Creek in Elmhurst and Oakbrook
FLOOD PROTECTION TO: Oak Brook, Oakbrook Terrace, Elmhurst
COST: Construction – $2,800,000 (Estimate)
Land – $500,000 (Estimate)
MAINTENANCE: Oak Brook, Elmhurst

9 BENSENVILLE DITCH IMPROVEMENT
CHANNEL IMPROVEMENT AND RESERVOIR

FLOOD PROTECTION TO: Bensenville
COST: Construction and Land: $700,000 (Bensenville)

Projects of the Metropolitan Sanitary District

10 WHITE PINE DITCH RESERVOIR
(COMPLETED IN 1976)

FLOOD STORAGE: 50 acre-feet
FLOOD PROTECTION TO: Buffalo Grove
COST: Construction – $120,000 (MSD)
$130,000 (DWR)
$ 7,400 (Buffalo Grove)
Land – 12 acres provided by Buffalo Grove, $240,000 (Estimated Value)
MAINTENANCE: White Pine Golf Course and Buffalo Grove

11 HERITAGE PARK RESERVOIR
(COMPLETED IN 1972, Improved in 1982)

FLOOD STORAGE: 114 acre-feet
FLOOD PROTECTION TO: Wheeling
COST: Construction – $225,000 (MSD)
$215,000 (Wheeling)
$ 93,000 (Wheeling Park District)
Land – 25 acres donated by Wheeling Park District, $545,000 (Estimated Value)
MAINTENANCE: Wheeling Park District and Wheeling

12 WILKE-KIRCHOFF RESERVOIR (COMPLETED IN 1973)

FLOOD STORAGE: 100 acre-feet
FLOOD PROTECTION TO: Arlington Heights
COST: Construction – $736,000 (MSD)
– $135,000 (Arlington Heights)
Land – 16 acres acquired by Arlington Heights, $232,000
MAINTENANCE: Arlington Heights

13 HILLSIDE RESERVOIR (COMPLETED IN 1976)

VOLUME: 100 acre-feet
FLOOD PROTECTION TO: Hillside, Westchester
COST: Construction – $920,000 (MSD)
Land – 5 acres, $371,000 (MSD); 2 acres donated by Hillside (1976 Estimated Value $148,000)
MAINTENANCE: Hillside

14 MAYFAIR RESERVOIR (COMPLETED IN 1977)

VOLUME: 74 acre-feet
FLOOD PROTECTION TO: Westchester
COST: Construction – $545,000 (MSD)
Land – 14 acres, $280,000 (MSD)
MAINTENANCE: Westchester

15 MT. PROSPECT RESERVOIR (COMPLETED IN 1978)

VOLUME: 130 acre-feet
FLOOD PROTECTION TO: Mt. Prospect
COST: Construction – $1,252,000 (MSD)
Land – 36 acres, $3,175,000 (MSD)
MAINTENANCE: Arlington Heights and Mt. Prospect

Continued . . .

16 BUFFALO CREEK RESERVOIR
(PHASE I COMPLETED 1983)
FLOOD STORAGE: Phase I – 280 acre-feet
Phase II – 420 acre-feet
Total – 700 acre-feet
FLOOD PROTECTION TO: Buffalo Grove, Wheeling, Unincorporated Cook County
COST: Construction – Phase I – $ 671,673 (MSD);
Phase II – $3,000,000 (Estimate, MSD)
Land – 190 acres, $2,000,000 (MSD)
MAINTENANCE: Lake County Forest Preserve District, Buffalo Grove, and MSD

17 O'HARE RESERVOIR (COMPLETED 1982)
VOLUME: 510 acre-feet
FLOOD PROTECTION TO: Des Plaines, Rosemont, Unincorporated Cook County
COST: Construction – $8,667,800 (MSD)
Land – 20 acres, $904,000 (MSD)
MAINTENANCE: MSD

Projects of the Soil Conservation Service

18 SPRING BROOK RESERVOIR (STRUCTURE 5)
FLOOD STORAGE: 870 acre-feet
FLOOD PROTECTION TO: Itasca, Wood Dale, Addison, Unincorporated DuPage County
COST: Construction – Flood Control – $5,500,000 Estimate (DWR)
Recreation – $446,800 (Estimate)
Land – $3,120,000 (Estimate, DuPage County Forest Preserve District)
MAINTENANCE: DuPage County Forest Preserve District

19 NORTHLAKE RESERVOIR (STRUCTURE 86)
FLOOD STORAGE: 380 acre-feet
FLOOD PROTECTION TO: Northlake, Melrose Park, Bellwood
COST: Construction – $2,449,700 (Estimate, SCS)
Land – 19 acres, $556,000 (MSD)
MAINTENANCE: Northlake

20 SILVER CREEK RESERVOIR (STRUCTURE 102)
FLOOD STORAGE: 500 acre-feet
FLOOD PROTECTION TO: Franklin Park, Unincorporated Cook County
COST: Construction – $5,250,000 (Estimate, SCS)
Land – 24 acres, $1,760,000 (MSD) plus 10 acres donated by Chicago, $884,000 (Estimated value)
MAINTENANCE: MSD

21 FRANKLIN PARK RESERVOIR (STRUCTURE 106)
FLOOD STORAGE: 245 acre-feet
FLOOD PROTECTION TO: Franklin Park, Melrose Park
COST: Construction – $2,827,900 (Estimate, SCS)
Land – $462,000 (Franklin Park) plus $370,000 (DWR)
MAINTENANCE: Franklin Park

22 WILLOW-HIGGINS RESERVOIR (STRUCTURE 140)
FLOOD STORAGE: 1,200 acre-feet
FLOOD PROTECTION TO: Des Plaines, Rosemont and Chicago
COST: Construction – $9,512,600 (Estimate, SCS)
Land – 45 acres, $100,000 (Chicago)
MAINTENANCE: MSD

23 WILLOW-HIGGINS CHANNEL IMPROVEMENT
DESCRIPTION: 2,200 foot long open channel
FLOOD PROTECTION TO: Des Plaines, Rosemont and Chicago
COST: Construction – $1,565,200 (Estimate, SCS)
Land – $923,000 (Estimate, Rosemont, Des Plaines)
MAINTENANCE: Des Plaines, Rosemont

24 McDONALD CREEK CHANNEL IMPROVEMENT AND DIVERSION CHANNEL
DESCRIPTION: Channel Improvement – 1,600 feet of enlarged rip-rap lined channel; Diversion Channel – 4,380 feet of new channel
FLOOD PROTECTION TO: Arlington Heights, Prospect Heights
COST: Construction – $340,700 (Estimate, SCS)
Land – $494,000 (Estimate, Prospect Heights)
MAINTENANCE: Prospect Heights

25 BUFFALO-WHEELING DIVERSION CHANNEL
DESCRIPTION: 8,800 feet of new channel
FLOOD PROTECTION TO: Wheeling
COST: Construction – $1,094,600 (Estimate, SCS)
Land – $1,008,000 (Wheeling) plus $703,000 (DWR) plus $39,000 (Cook County Forest Preserve District)
MAINTENANCE: Wheeling

26 RIVERSIDE LAWN DIKE
DESCRIPTION: 2,500 foot earthen dike
FLOOD PROTECTION TO: Riverside Lawn (Unincorporated Cook County)
COST: Construction – $261,300 (Estimate, SCS)
Land – $88,000 (Estimate, Cook County Forest Preserve District)
MAINTENANCE: Cook County FPD and MSD

Projects of the Division of Highways

27 BUFFALO-WHEELING CHANNEL BRIDGE REPLACEMENT
LOCATION: Route 83 and McHenry Road
FLOOD PROTECTION TO: Residential areas of Wheeling
COST: Construction – $241,000 (Illinois Divisions of Highways and Water Resources.)

Projects of the DuPage County Forest Preserve District

28 KINGERY WEST LEVEE
LOCATION: East side of Salt Creek between North Avenue and Fullerton Avenue
FLOOD PROTECTION TO: Kingery West Subdivision of Addison
COST: Construction – $850,000 (Estimate DuPage Co. Forest Preserve Dist.) $1,015,000 (DWR)
Land – $3,750,000 (DuPage County Forest Preserve District)
MAINTENANCE: DuPage County Forest Preserve Dist.

Projects of the City of Chicago

29 LAKE O'HARE RESERVOIR

LOCATION: O'Hare Airport on Crystal Creek
VOLUME: 1,160 acre-feet
FLOOD PROTECTION TO: Neighboring O'Hare Airport Communities
COST: Construction – $4,000,000 (Estimate)
Land – owned by Chicago (Estimated value – $122,000, 1955)
MAINTENANCE: City of Chicago

Projects of the U.S. Army Corps of Engineers

30 McCOOK LEVEE REHABILITATION

LOCATION: West bank levee between 47th Street and Lawndale Avenue
FLOOD PROTECTION TO: Commercial/industrial area of McCook
COST: Construction – $1,650,000 (Corps of Engineers)
$ 550,000 (MSDGC)

31 CUP O'HARE RESERVOIR

FLOOD STORAGE: 1,050 acre-feet
COST: Construction – $18.1 million, ($13.6 million, Corps of Engineers; $4.5 million, local share)
Land – 93.7 acres, 4,230,000 (MSD, 1974)

Program Status

Funding

The final Watershed Plan EIS for the Lower DesPlaines Tributaries Watershed was completed by the Soil Conservation Service in June 1985. It has been submitted to the U.S. Congress and is presently under review for authorization of construction funds.

Floodplain Regulations

The Illinois Division of Water Resources regulates the floodways throughout the Lower Des Plaines Tributaries Watershed in Illinois. Any construction proposed within the floodway areas must be permitted by the DWR and must not have significant adverse impacts.

Stream Preservation Program

The Illinois Division of Water Resources is lead agency for the development and coordination of a watershed-wide stream preservation program. The proposed program will be presented to the watershed communities for implementation. The program will outline annual inspection and maintenance procedures.

Floodproofing Program

Approximately 1,500 existing structures will remain subject to flooding by the 100 year frequency flood event after installation of the structural measures. Floodproofing technical assistance to these owners is available through the Division of Water Resources.

Land Protection Program

Based upon an inventory of identified needs, a land protection program was developed by a subcommittee of the Lower Des Plaines Tributaries Steering Committee. Under this program the local Soil and Water Conservation Districts (SWCD), assisted by the Soil Conservation Service (SCS), will provide technical assistance to landowners, operators, and units of government to install the agricultural and urban land protection measures outlined in the plan.

When the plan was prepared, agriculture represented only 9 percent of total land use, with the majority being adequately protected from excess erosion. It is believed that increasing development within the watershed has led to a decline in this figure.

The land protection program will consist of accelerated technical assistance to individuals and local units of government for implementation of urban soil erosion and sediment control ordinances for land under their jurisdiction. The following municipalities have ordinances in various stages of implementation Arlington Heights, Bensenville, Bloomingdale, Buffalo Grove, Burr Ridge, Deer Park, Des Plaines, Elk Grove Village, Elmhurst, Glenview, Green Oaks, Hinsdale, Itasca, Kildeer, Lake Zurich, Libertyville, Lombard, Long Grove, Mt. Prospect, Mundelein, North Lake, Oak Brook, Palatine, Prospect Heights, Riverwoods, Rolling Meadows, Roselle, Schaumburg, Vernon Hills, Villa Park, Westchester, Westmont, Wheeling, Willowbrook, and Wood Dale. In addition, ordinances are in effect within unincorporated areas of Cook, DuPage, and Lake Counties.

Structure Acquisition Program

The State of Illinois and the DuPage County Forest Preserve District have actively acquired residential buildings subject to frequent and severe flooding. To date, 62 structures have been acquired and removed.

Land Purchase Program

The purchase of open space and wetlands as identified in the Des Plaines Floodwater Management Plan continues. The DuPage County Forest Preserve District recently purchased Campbell Slough, a high quality wetland area, which it will preserve in its natural state.

Cal-Sag Watershed

1 STONY CREEK EAST CHANNEL IMPROVEMENT AND OUTLET CHANNEL (ALSIP, BLUE ISLAND)

2 JUSTICE CREEK OUTLET (JUSTICE)

3 JUSTICE FLOOD CONTROL PROJECT (JUSTICE)

4 NAVAHO CREEK OUTLET (PALOS HEIGHTS)

5 LUCAS DITCH FLOOD CONTROL PROJECT (PALOS HILLS, HICKORY HILLS)

6 CRESTWOOD DRAINAGE PROJECT (CRESTWOOD)

7 HICKORY HILLS RESERVOIR (HICKORY HILLS)

8 MILL CREEK LEVEE

9 MELVINA DITCH RESERVOIR AND CHANNEL IMPROVEMENT (OAK LAWN)

10 OAK LAWN RETENTION RESERVOIR (OAK LAWN)

11 STONY CREEK WEST CHANNEL IMPROVEMENT (PALOS HILLS, HICKORY HILLS, WORTH, CHICAGO RIDGE)

Projects of the Division of Water Resources

1 EAST STONY CREEK CHANNEL IMPROVEMENT AND OUTLET CHANNEL (COMPLETED IN 1977)
PURPOSE: Improve flow in creek and discharge into Cal-Sag Channel; Approximate length 3.2 miles
FLOOD PROTECTION TO: Alsip, Blue Island, Merrionette Park
COST: Construction – $1,262,000 (DWR)
Land – furnished by MSD
(1960 Estimated value $10,000)
MAINTENANCE: MSD

2 JUSTICE CREEK OUTLET (COMPLETED IN 1974)
PURPOSE: Improve discharge into Sanitary and Ship Canal; length 450 feet
FLOOD PROTECTION TO: Justice
COST: Construction – $96,000 (DWR)
Land – furnished by MSD
(Estimated value $10,000)
MAINTENANCE: Justice

3 JUSTICE FLOOD CONTROL PROJECT (UNDER CONSTRUCTION)
PURPOSE: Alleviate flooding along Justice Creek and 71st Street Ditch
FLOOD PROTECTION TO: Justice
COST: Being estimated
Land – furnished by Justice
MAINTENANCE: Justice

4 NAVAHO CREEK OUTLET (COMPLETED IN 1975)
PURPOSE: Improve discharge into Calumet-Sag Channel
FLOOD PROTECTION TO: Palos Heights
COST: Construction – $14,000 (Estimate, DWR)

5 LUCAS DITCH FLOOD CONTROL PROJECT
PURPOSE: 12,760 foot channel improvement and 4,200 foot diversion channel to improve drainage
FLOOD PROTECTION TO: Palos Hills, Hickory Hills
COST: Construction – $185,000 (Estimate, 1961)
Land – 16 acres (Estimated Value $32,000; MSD, 1962)

6 CRESTWOOD DRAINAGE PROJECT (COMPLETED IN 1974)
PURPOSE: Improve drainage in Crestwood and divert floodwaters from Tinley Creek
FLOOD PROTECTION TO: Crestwood
COST: Construction – $179,000 (DWR)
MAINTENANCE: Crestwood

7 HICKORY HILLS RESERVOIR (Proposed for 1985)
VOLUME: 134 acre-feet
FLOOD PROTECTION TO: Approximately 44 structures in Hickory Hills
COST: Construction – $1,914,000 (DWR plus Hickory Hills)
Land – 12 acres, 1983 estimate, $27,000 (MSD)
MAINTENANCE: Hickory Hills

8 MILL CREEK LEVEE (PROPOSED FOR 1987)
PURPOSE: Flood protection to eight structures in unincorporated Cook County
COST: Construction – $490,000 (DWR)
Land – $72,000 (Orland Township)
MAINTENANCE: Orland Township

Projects of the Metropolitan Sanitary District

9 MELVINA DITCH RESERVOIR AND CHANNEL IMPROVEMENT (COMPLETED IN 1973)
VOLUME: 165 acre-feet
CHANNEL IMPROVEMENT LENGTH: Approximately 1 mile
FLOOD PROTECTION TO: Bedford Park, Oak Lawn
COST: Construction – $1,900,000 (MSD)
$ 500,000 (Oak Lawn)
Land – 12 acres, $119,000 (MSD)
MAINTENANCE: Oak Lawn, Oak Lawn Park District and MSD

10 OAK LAWN RETENTION RESERVOIR (COMPLETED IN 1971)
VOLUME: 24 acre-feet
FLOOD PROTECTION TO: Oak Lawn
COST: Construction – $120,000 (MSD)
Land – donated by Oak Lawn (1970 Estimated Value, $83,000)
MAINTENANCE: Oak Lawn

11 WEST STONY CREEK CHANNEL IMPROVEMENT (COMPLETED IN 1972)
PURPOSE: Improve flow in Creek and discharge into Cal-Sag. Approximate length – 5.7 miles
FLOOD PROTECTION TO: Palos Hills, Hickory Hills, Worth, Chicago Ridge
COST: Construction – $344,000 (MSD)
Land – obtained by MSD (1960 Estimated Value $17,000)

Program Status

Floodplain Regulations

The Illinois Division of Water Resources regulates the floodways throughout the Cal-Sag Watershed in Illinois. Any construction proposed within the floodway areas must be permitted by the DWR and must not have significant adverse impacts.

Little Calumet River Watershed

*1 TWIN LAKES RESERVOIR (MIDLOTHIAN)
2 CALUMET UNION RESERVOIR (HAZELCREST)
3 MIDLOTHIAN CREEK DIVERSION CHANNEL (ROBBINS)
4 NATALIE CREEK DIVERSION CHANNEL (MIDLOTHIAN)
5 TINLEY PARK RESERVOIR (TINLEY PARK)
6 EDWARD C. HOWELL RESERVOIR (MARKHAM)
7 GEORGE M. O'BRIEN RESERVOIR (THORNTON)
8 DR. MARY WOODLAND RESERVOIR (LYNWOOD)
9 CAL-UNION CHANNEL IMPROVEMENT (HARVEY)
10 LITTLE CALUMET RIVER INDIANA LEVEES (HAMMOND & MUNSTER)
11 THORTON RESERVOIR

Projects of the Division of Water Resources

1 TWIN LAKES RESERVOIR (COMPLETED IN 1974)
VOLUME: 950 acre-feet
FLOOD PROTECTION TO: Midlothian, Tinley Park
COST: Construction – $939,400 (DWR)
Land – furnished by Cook County Forest Preserve District, DWR, Village of Midlothian (1974 Estimated value $273,000)
MAINTENANCE: Cook County Forest Preserve District

Projects of the Metropolitan Sanitary District

2 CALUMET UNION RESERVOIR (COMPLETED IN 1976)
VOLUME: 500 acre-feet
FLOOD PROTECTION TO: Hazelcrest, Markham, Harvey
COST: Construction – $2,838,000 (MSD)
Land – 44 acres, $414,500 (MSD)
MAINTENANCE: Hazelcrest Park District and MSD

Projects of the Cook County Highway Department

3 MIDLOTHIAN CREEK DIVERSION CHANNEL (COMPLETED IN 1980)
DESCRIPTION: 1,200 feet channel improvement between 137th and 139th Streets; 2,500 feet, 7.5′ x 12′ twin box conduit along Kedzie Avenue to Cal-Sag Channel
FLOOD PROTECTION TO: Robbins, Midlothian
COST: Construction – $1,482,000 (Cook County)
Land – Cook County, Robbins
MAINTENANCE: Cook County Highway Department

4 NATALIE CREEK DIVERSION CHANNEL
DESCRIPTION: 9,200 feet, 96″ and 48″ pipe (147th to 135th Streets)
700 feet 102″ pipe from 135th to Cal-Sag Channel
FLOOD PROTECTION TO: Midlothian
COST: Construction – $1,382,600 (Estimate) Plans and specifications have been prepared.
MAINTENANCE: Cook County Highway Department

Projects of the Soil Conservation Service

5 TINLEY PARK RESERVOIR (STRUCTURE 32, SCHEDULED COMPLETION – 1988)
FLOOD STORAGE: 616 acre-feet
FLOOD PROTECTION TO: Tinley Park, Midlothian
COST: Construction – Flood Control – $7,932,000 (SCS)
Recreation – $1,068,000 (Estimate, SCS) plus $768,000 (Estimate, Tinley Park Park District)
Land – 98 acres, $2,845,000 (MSD) plus 32 acres, $1,450,000 (Estimated value, Tinley Park) plus 8 acres, $313,000 (Estimated value, Tinley Park Park District)
MAINTENANCE: MSD and the Tinley Park Park District

6 EDWARD C. HOWELL (STRUCTURE 53, SCHEDULED COMPLETION – 1987)
(Approach channel completed 1984 – $231,400; MSD)
FLOOD STORAGE: 589 acre-feet
FLOOD PROTECTION TO: Markham, Harvey, South Holland
COST: Construction – $4,492,000 (SCS)
Land – 84 acres, $990,000 (MSD) plus $250,000 (Cook County); separate landscaping contract to follow $25,000 (SCS Estimate)
MAINTENANCE: MSD

7 GEORGE M. O'BRIEN RESERVOIR (STRUCTURE 84) (Composite with TARP – Phase II, COE)
FLOOD STORAGE: 9,600 acre-feet
FLOOD PROTECTION TO: Dolton, South Holland, Hammond, Calumet City, East Chicago
COST: $34,802,000
Land – 129 acres, $9,905,000 (MSD) plus $628,000 (DWR)
MAINTENANCE: MSD

8 DR. MARY WOODLAND RESERVOIR (STRUCTURE 143, SCHEDULED COMPLETION – 1988)
FLOOD STORAGE: 1,076 acre-feet
FLOOD PROTECTION TO: Lynwood, Lansing
COST: Construction – $5,364,000 (SCS)
Land – 137 acres, $1,417,500 (MSD), separate Landscaping Contract to follow, $20,000 (SCS Estimate)
MAINTENANCE: MSD

9 CAL-UNION DRAINAGE DITCH IMPROVEMENT
DESCRIPTION: 1.74 miles improved channel; 0.25 miles of concrete lined channel
FLOOD PROTECTION TO: Markham, Harvey, South Holland
COST: Construction – $4,192,000 (Estimate, SCS)
Land – $167,000 (Estimate, Cal-Union Drainage District); separate Landscaping Contract to follow, $75,000 (SCS Estimate)
MAINTENANCE: Calumet Union Drainage District

Projects of the Corps of Engineers

10 LITTLE CALUMET RIVER, INDIANA LEVEES
(Under preconstruction engineering and design)
DESCRIPTION: 6 river miles of levees/floodways on both banks. Recreation trail and support facilities.
FLOOD PROTECTION TO: Hammond, Munster (Project continues through Griffith, Highland and Gary on Lake Michigan basin)
COST: Construction – $70,700,000 (Estimate, Corps of Engineers)
Land – $4,700,000 (Estimate, Little Calumet River Basin Development Commission)

11 THORTON RESERVOIR (TARP – Phase II Composite)
See No. 18, Page 35

Program Status

Federal Funding for the Soil Conservation Service Proposed Program

In September 1982, the Little Calumet River Watershed Plan and Environmental Impact Statement were approved and funded. The local sponsors are proceeding to meet their commitments for land acquisition and non-structural program development and implementation.

Land Protection Program

Twenty-three communities as well as unincorporated Cook and Will Counties have passed and are enforcing ordinances to control soil erosion losses on developing land.

Three areas of high sediment production are included in this protected area. They are Plum Creek (16,700 acres) which is 85 percent adequately treated; Butterfield Creek (1,200 acres) which is 60 percent treated; and Midlothian Creek (2,400 acres) which is 65 percent treated. The protected area of Midlothian Creek is especially critical because it is upstream from the Tinley Park Reservoir. Likewise, the area upstream from the Lynwood Reservoir is 91 percent adequately treated. These measures will assure that sediment will not fill the reservoirs and rivers.

Federal Funding for the Corps of Engineers Proposed Program

In October 1986, the Little Calumet River, Indiana project was authorized. The Little Calumet River Basin Development Commission is proceeding to meet its commitment for land acquisition and the structural implementation.

Floodplain Regulations

The Illinois Division of Water Resources regulates the floodways throughout the Little Calumet River Watershed in Illinois. Any construction proposed within the floodway areas must be permitted by the DWR and must not have significant adverse impacts.

Stream Preservation Program

The Illinois Division of Water Resources is the coordinating agency for a proposed program that has been presented to the Little Calumet Steering Committee for implementation. The program outlines annual inspection and maintenance procedures. Memoranda of cooperation are in place for 28 of the 30 watershed governmental units.

DuPage River Watershed

* 1 WEST BRANCH DUPAGE RIVER IMPROVEMENT (HANOVER PARK)

2 WEST BRANCH DUPAGE RIVER CHANNEL IMPROVEMENT NORTH OF IRVING PARK ROAD (HANOVER)

3 ST. JOSEPH CREEK CHANNEL IMPROVEMENT (LISLE, DOWNERS GROVE)

4 NAPERVILLE RESERVOIR (DUPAGE COUNTY FOREST PRESERVE)

5 UPPER DUPAGE RESERVOIR (HANOVER)

Projects of the Division of Water Resources

1 WEST BRANCH DUPAGE RIVER CHANNEL IMPROVEMENT

PURPOSE: Channel modification to improve drainage in the Hanover Park residential area adjacent to the river
FLOOD PROTECTION TO: Hanover Park; LONG MEADOW ROAD TO CMSP & P RAILROAD TRACKS 4,700 FEET (COMPLETED IN 1977)
COST: Construction – $280,000 (DWR)
Land rights furnished by MSD as part of Upper DuPage Reservoir Project

2 IRVING PARK ROAD TO LONG MEADOW ROAD 1,300 FEET (COMPLETED IN 1981)

COST: Construction – $88,000 (DWR)
Land rights furnished by Hanover Park
Estimated value – $10,000
MAINTENANCE: Hanover Park

WEST BRANCH DUPAGE RIVER CHANNEL IMPROVEMENT 1,700 FEET (NORTH OF IRVING PARK ROAD)

PURPOSE: Improve drainage in Hanover Park residential area.
FLOOD PROTECTION TO: Hanover Park
COST: Construction – $1,300,000 Estimate 1980 (DWR)
Land rights furnished by Hanover Park
Estimated value $20,000
MAINTENANCE: Hanover Park

3 ST. JOSEPH CREEK CHANNEL IMPROVEMENT (COMPLETED IN 1980)

PURPOSE: 14,200 feet of channel modification to improve drainage in Lisle and Downers Grove
FLOOD PROTECTION TO: Lisle, Downers Grove
COST: Construction $1,320,000 (DWR)
Land – $128,000 (DWR)

4 NAPERVILLE RESERVOIR (COMPLETED IN 1971)

VOLUME: 2,500 acre-feet
FLOOD PROTECTION TO: Naperville, Unincorporated DuPage County
COST: Construction – $1,176,300 (DWR, estimated)
Land – $975,000 (DWR)
MAINTENANCE: DuPage County Forest Preserve District

Projects of the Metropolitan Sanitary District

5 UPPER DUPAGE RESERVOIR (COMPLETED IN 1977)

VOLUME: 230 acre-feet
FLOOD PROTECTION TO: Hanover Park
COST: Construction – $847,000 (MSD)
Land – 26 acres, $212,000 (MSD)
MAINTENANCE: Hanover Park Park District and MSD

Program Status

Floodwater Management Planning

The Corps of Engineers through the Chicago-South End of Lake Michigan Urban Water Damage Study is investigating solutions to urban water damage problems caused by overbank flooding and poor drainage. The investigation of drainage problems is limited to flooding that results from the submergence of sewer outlets by high river stages. Because of the large size of the area, the study is being conducted through a series of six interim reports.

Work on Interim Report No. 2 for the DuPage River was completed in August 1982. The report concluded that Corps of Engineers participation in implementing flood damage reduction measures in the DuPage River Basin is not justified at this time due to the lack of economic feasibility.

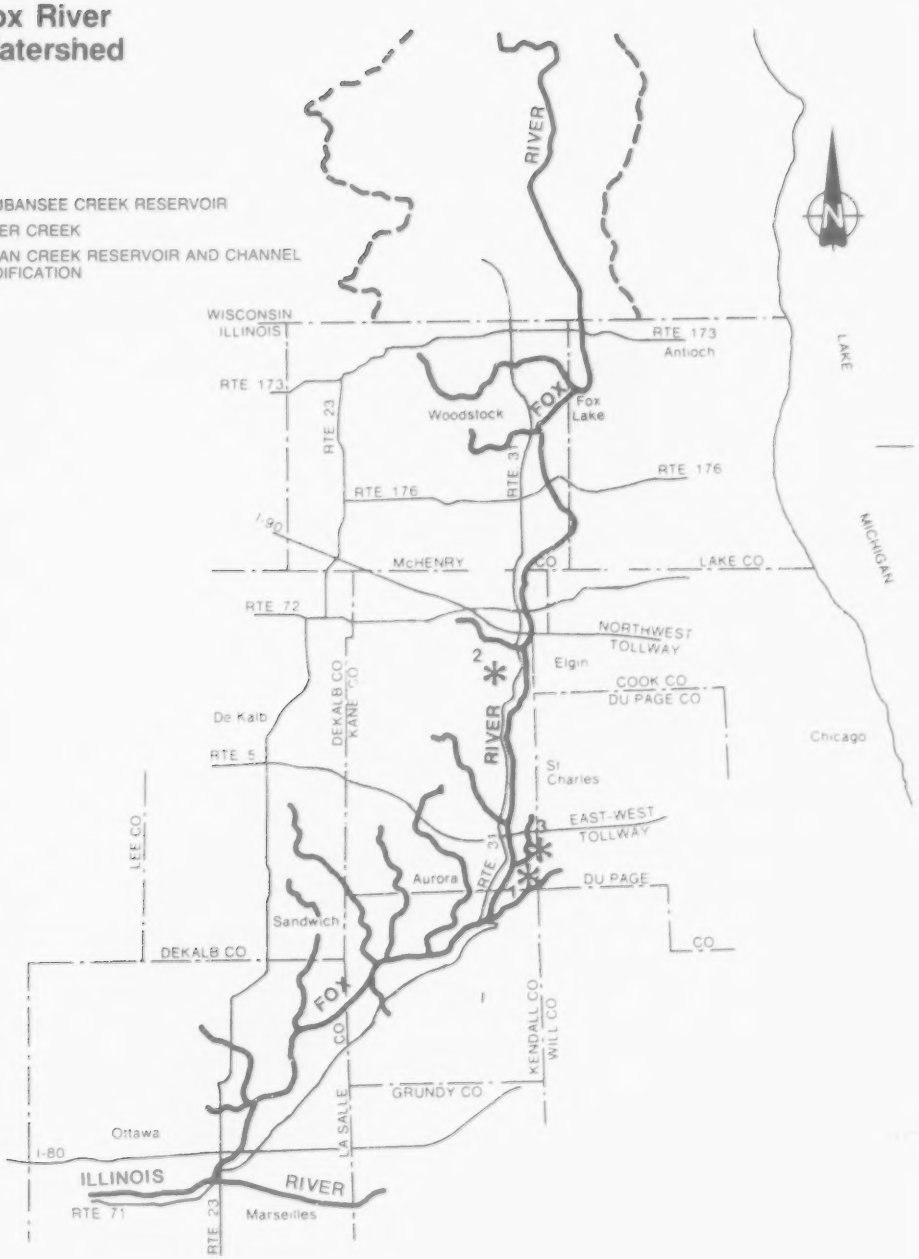
The DuPage County Forest Preserve District requested that the Corps reinvestigate the flood problems at the Valley View residential development on the East Branch under the authority of Section 205 of the 1948 Flood Control Act. The initial appraisal was initiated September 1983. The reconnaissance study will be completed in May 1987.

Floodplain Regulations

The Illinois Division of Water Resources regulates the floodways throughout the DuPage River Watershed in Illinois. Any construction proposed within the floodway areas must be permitted by the DWR and must not have significant adverse impacts.

Fox River Watershed

*1 WAUBANSEE CREEK RESERVOIR
2 OTTER CREEK
3 INDIAN CREEK RESERVOIR AND CHANNEL MODIFICATION



Projects of the Division of Water Resources

1 WAUBANSEE CREEK RESERVOIR
(COMPLETED IN 1979)

VOLUME: 50 acre-feet
LEVEE: 3,000 feet
FLOOD PROTECTION TO: 60 homes in Park View Estate, Subdivision of Village of Montgomery on Fox River
COST: Construction – $914,000 (DWR)
Land – $119,000 (Montgomery)
MAINTENANCE: Montgomery

2 OTTER CREEK CHANNEL IMPROVEMENT
(COMPLETED IN 1982)

LENGTH: 5,295 feet
FLOOD PROTECTION TO: City of Elgin
COST: Construction – $281,200 (DWR)
Land – Obtained by City of Elgin
MAINTENANCE: City of Elgin

3 INDIAN CREEK RESERVOIR AND CHANNEL MODIFICATION

FLOOD STORAGE VOLUME: 310 acre-feet
CHANNEL LENGTH: 8,400 feet
FLOOD PROTECTION TO: 130 homes in Aurora and Aurora Township
COST: Construction – $2,300,000 (Estimate, DWR)
Land – 55 acres, $600,000 (Estimate, City of Aurora)
MAINTENANCE: City of Aurora

Program Status

Floodwater Management Planning

The Corps of Engineers is investigating the water resource problems and needs of the Fox River Basin to provide a plan for developing, utilizing, and conserving the basin's water and related land resources.

The Fox River Basin has a drainage area of 2,580 square miles and includes parts of both Illinois and Wisconsin. The character of the basin varies from resort-type developments in the north to predominantly rural areas in the south. The Fox River flows through the Chain of Lakes area, which contains several inter-connected lakes in northern Illinois.

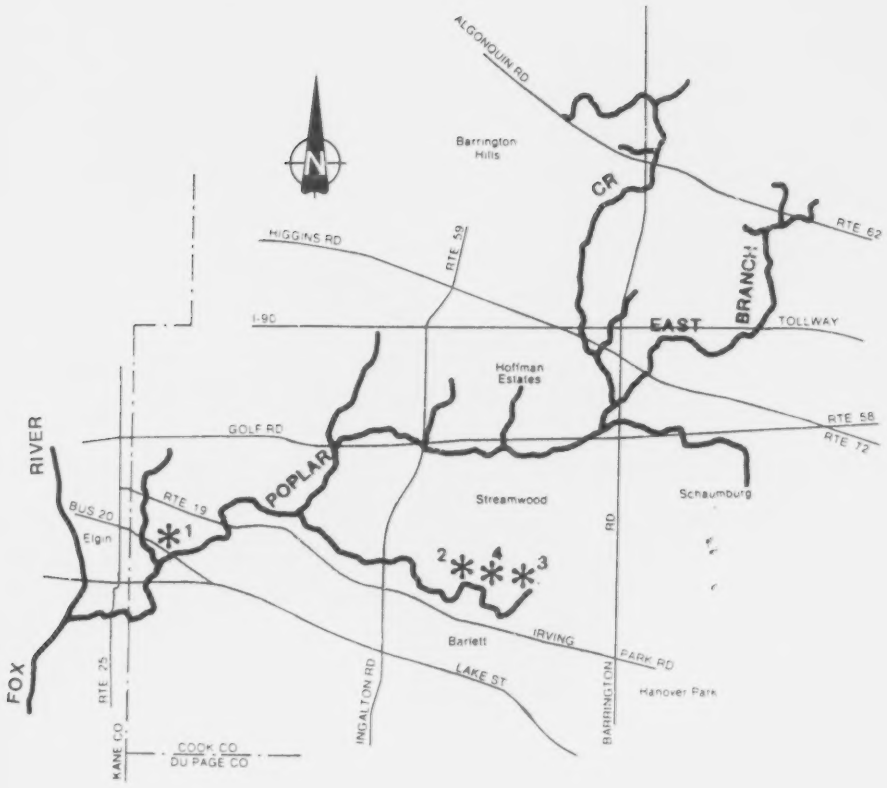
Among the study's objectives are flood control, floodplain management, wastewater management, including storm water runoff, regional water supply, water quality control, recreation, fish and wildlife conservation protection and enhancement of aesthetic qualities, and other measures for enhancement and protection of the environment on streams in the basin area.

A preliminary feasibility report was completed by the Chicago District in fiscal year 1978. A detailed feasibility study was completed in June 1984 with recommendations for new gate structures to be added to the Algonquin and McHenry dams and for non-structural protection to be provided to some 80 homes in Kane County to be constructed under the Corps of Engineers continuing authorities small project program. The final design study is scheduled to be completed in mid 1987.

Floodplain Regulations

The Illinois Division of Water Resources regulates the floodways throughout the Fox River Watershed in Illinois. Any construction proposed within the floodway areas must be permitted by the DWR and must not have significant adverse impacts.

Poplar Creek Watershed



*1 POPLAR CREEK LEVEE (ELGIN)
2 OAK HILL PARK RESERVOIR (STREAMWOOD)
3 DOLPHIN PARK RESERVOIR (STREAMWOOD)
4 HILLSIDE PARK RESERVOIR (STREAMWOOD)

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Projects of the Division of Water Resources

1 POPLAR CREEK LEVEE (Proposed for 1988)
LENGTH: 1,400 feet
BENEFITED AREA: 102 residential properties; 28 businesses; City of Elgin
COST: Construction – $500,000 (Estimate, DWR)
Land – $88,000 (Estimate, Elgin)
MAINTENANCE: City of Elgin

Projects of the Metropolitan Sanitary District

2 OAK HILL PARK RESERVOIR (COMPLETED IN 1976)
VOLUME: 77 acre-feet
BENEFITED AREA: Streamwood
COST: Construction – $346,000 (MSD)
34 acres of land donated by Village
Estimated value $340,000 (1976)
MAINTENANCE: Streamwood and Streamwood Park Dist.

3 DOLPHIN PARK RESERVOIR (COMPLETED IN 1976)
VOLUME: 96 acre-feet
BENEFITED AREA: Streamwood
COST: Construction – $238,000 (MSD)
33 acres of land donated by Village
Estimated value $330,000 (1976)
MAINTENANCE: Streamwood and Streamwood Park Dist.

4 HILLSIDE PARK RESERVOIR (COMPLETED IN 1976)
VOLUME: 35 acre-feet
BENEFITED AREA: Streamwood
COST: Construction – $87,000 (MSD)
18 acres of land donated by Village
Estimated value $180,000 (1976)
MAINTENANCE: Streamwood and Streamwood Park Dist.

Program Status

Land Protection Program

Soil Erosion and Sedimentation Control Ordinances have been enacted throughout the Poplar Creek Watershed which includes Barrington Hills, South Barrington, Hoffman Estates, Schaumburg, Hanover Park, Streamwood, Bartlett, Elgin, Inverness, and unincorporated Cook County.

These ordinances will control erosion and sedimentation from developing areas in the watershed to assure that excessive sediment does not find its way into the storm water conveyance systems. The North Cook Soil and Water Conservation District is providing technical assistance to the communities. The land protection programs are currently being evaluated by the Conservation District to determine the effectiveness of each and to make recommendations for improving them if necessary.

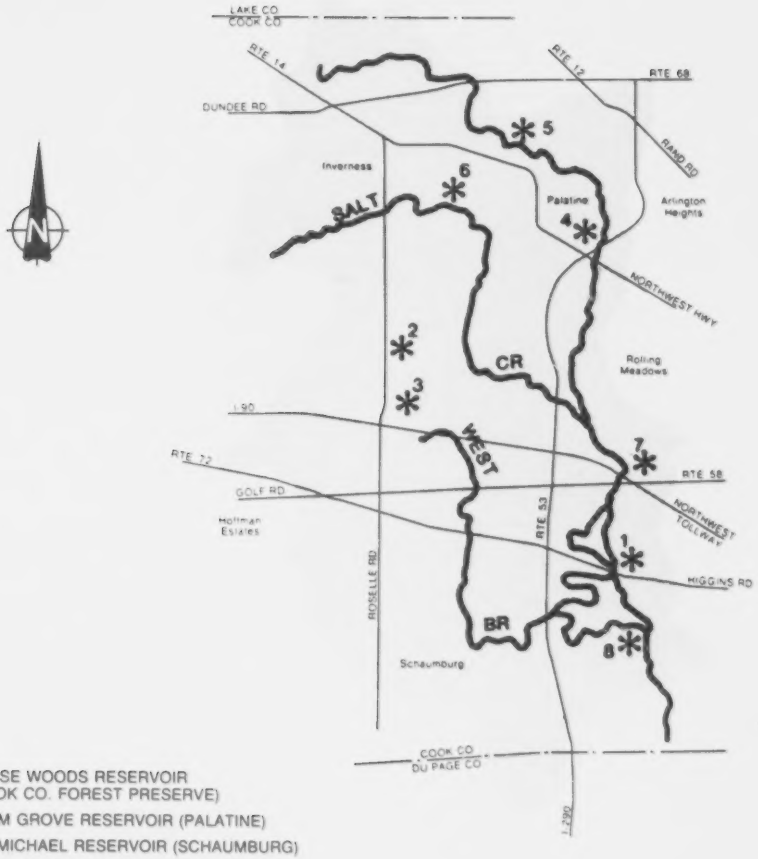
Floodplain Regulations

The Illinois Division of Water Resources regulates the floodways throughout the Poplar Creek Watershed in Illinois. Any construction proposed within the floodway areas must be permitted by the DWR and must not have significant adverse impacts.

Wetland and Open Space Acquisition

Communities in the Poplar Creek Watershed are actively acquiring and preserving open space and wetland to meet local needs. A green belt is planned to link municipalities with existing Cook County Forest Preserve District holdings. Approximately 435 acres of stream corridor is required for this need.

Upper Salt Creek Watershed



* 1 BUSSE WOODS RESERVOIR (COOK CO. FOREST PRESERVE)

2 PLUM GROVE RESERVOIR (PALATINE)

3 ST. MICHAEL RESERVOIR (SCHAUMBURG)

4 TWIN LAKES RESERVOIR (PALATINE)

5 TOM T. HAMILTON RESERVOIR (PALATINE)

6 MARGRETH RIEMER RESERVOIR (PALATINE)

7 REACH F, PHASE I (ROLLING MEADOWS)

8 BUSSE WOODS DAM MODIFICATION

Projects of the Soil Conservation Service

1 BUSSE WOODS RESERVOIR (COMPLETED IN 1978)
FLOOD STORAGE: 1,540 acre-feet
FLOOD PROTECTION TO: Elk Grove Village, Wood Dale, Addison, Villa Park
COST: Construction – Flood Control – $4,300,000 (DWR) plus $2,075,000 (SCS)
Recreation – $7,725,000
$3,792,100 (SCS)
$3,932,900 (CCFPD, DWR)
Land – $14,000,000 (estimated value, Cook County Forest Preserve District)
MAINTENANCE: Cook County Forest Preserve District

2 PLUM GROVE RESERVOIR
(STRUCTURE 2, COMPLETED 1984)
FLOOD STORAGE: 218 acre-feet
FLOOD PROTECTION TO: Rolling Meadows, Schaumburg
COST: Construction – Flood Control – $791,400 (SCS) plus $39,300 (MSD)
Recreation – $81,500 (DWR) plus $64,000 (Palatine Park District) plus $15,000 (Palatine Township) plus $ 4,500 (Village of Palatine)
Land – 146 acres, $2,790,000 (MSD)
MAINTENANCE: Palatine Park District and MSD

3 ST. MICHAEL RESERVOIR
(STRUCTURE 3, COMPLETED 1986)
FLOOD STORAGE: 407 acre-feet
FLOOD PROTECTION TO: Schaumburg, Rolling Meadows
COST: Construction – $3,565,800 (SCS) plus $ 734,500 (MSD)
Land – 215 acres, $2,100,000 (MSD)
Landscaping – Separate Contract to follow, $85,000 (SCS Estimate)
MAINTENANCE: Catholic Cemeteries and MSD

4 TWIN LAKES RESERVOIR
(STRUCTURE 4, COMPLETED 1986)
FLOOD STORAGE: 430 acre-feet
FLOOD PROTECTION TO: Palatine, Arlington Heights, Rolling Meadows
COST: Construction – Flood Control – $3,183,400 (SCS) plus $116,100 (MSD)
Landscaping – $94,000 (SCS)
Land – 32 acres, $1,400,000 (MSD) plus 47 acres from Village of Palatine, $1,175,000 (Estimated Value)
MAINTENANCE: MSD and Salt Creek Rural Park District

5 TOM T. HAMILTON RESERVOIR (STRUCTURE 5, COMPLETED 1981)
FLOOD STORAGE: 537 acre-feet
FLOOD PROTECTION TO: Palatine, Arlington Heights, Rolling Meadows
COST: Construction – $5,633,000 (SCS), $56,000 (MSD)
Land – 90 acres, $1,447,000 (MSD)
MAINTENANCE: Palatine Park District and MSD

6 MARGRETH RIEMER RESERVOIR (STRUCTURE 6, COMPLETED 1983)
FLOOD STORAGE: 572 acre-feet
FLOOD PROTECTION TO: Palatine, Rolling Meadows
COST: Construction – $7,230,000 (SCS), $63,900 (MSD)
Land – 90 acres, $2,220,000 (MSD)
MAINTENANCE: Palatine Park District and MSD

7 REACH F PHASE I CHANNEL IMPROVEMENT (COMPLETED IN 1981)
DESCRIPTION: Improve channel to enhance flows for 0.38 miles
FLOOD PROTECTION TO: Rolling Meadows
COST: Construction cost included in Busse Woods Reservoir Contract.
Land rights obtained by Division of Water Resources.

Projects of the Division of Water Resources

8 BUSSE WOODS DAM MODIFICATION
VOLUME: Modification will increase volume for more frequent events.
FLOOD PROTECTION TO: Elk Grove Village, Itasca, Wood Dale, Elmhurst, Addison, Villa Park and Oak Brook
COST: Construction – $1,500,000

Program Status

Land Protection Program

Soil erosion and sedimentation control ordinances have been enacted in the Upper Salt Creek Watershed which includes the communities of Inverness, Hoffman Estates, Palatine, Rolling Meadows, Schaumburg, Elk Grove, and unincorporated Cook County. These ordinances will control erosion losses from agricultural and developing areas in the watershed to assure that excessive sediment does not find its way into the storm water conveyance systems. Procedures and Standards for Urban Soil Erosion and Sedimentation for Illinois was developed in 1981 by the Northeast Illinois Soil Erosion and Sedimentation Control Steering Committee.

The Soil and Water Conservation Districts are conducting seminars for counties, municipalities, developers and consultants.

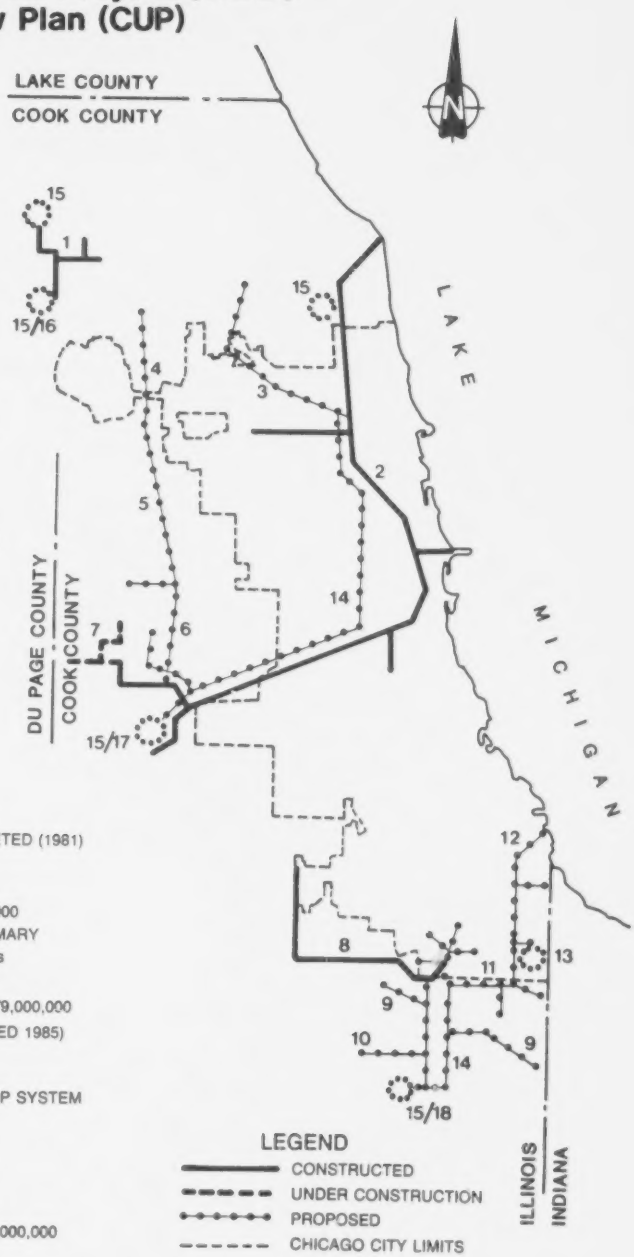
Stream Preservation Program

The Illinois Division of Water Resources is serving as lead agency for the development and coordination of a watershed-wide stream preservation program. The technical assistance program is available to communities in the watershed.

Floodplain Regulations

The Illinois Division of Water Resources regulates the floodways throughout the Upper Salt Creek Watershed in Illinois. Any construction proposed within the floodway areas must be permitted by the DWR and must not have significant adverse impacts.

Central Basin Watershed
Tunnel and Reservoir Project (TARP)
Chicago Underflow Plan (CUP)



PHASE I TARP SYSTEMS

1 UPPER DES PLAINES
2 MAINSTREAM
3 MAINSTREAM, NORTH BRANCH LEG
4 DES PLAINES, NORTH LEG
5 DES PLAINES, MIDDLE LEG
6 DES PLAINES, SOUTH LEG
7 DES PLAINES, WEST LEG
8 CALUMET, CAL-SAG LEG
9 CALUMET, LITTLE CAL LEG
10 CALUMET, INDIANA AVENUE AND MARKHAM LEG
11 CALUMET, 140TH STREET LEG
12 CALUMET, TORRENCE AVENUE LEG
13 O'BRIEN PUMP STATION

PHASE II TARP SYSTEMS (MSD)

14 TUNNELS
15 RESERVOIRS

CHICAGO UNDERFLOW PLAN (CORPS)

16 O'HARE RESERVOIR
17 McCOOK RESERVOIR
18 THORNTON RESERVOIR

Projects of the Metropolitan Sanitary District

1 UPPER DES PLAINES SYSTEM (COMPLETED (1981)
TRIBUTARY AREA: 13.7 square miles
TOTAL TUNNEL LENGTH: 6.6 miles
STORAGE VOLUME: 212.8 acre-feet
TOTAL CONSTRUCTION COST: $64,000,000

TOTAL MAINSTREAM SYSTEM SUMMARY
TRIBUTARY AREA: 219.9 square miles
TOTAL TUNNEL LENGTH: 40.3 miles
STORAGE VOLUME: 3,170 acre-feet
TOTAL CONSTRUCTION COST: $1,179,000,000

2 MAINSTREAM TARP SYSTEM (COMPLETED 1985)
TUNNEL LENGTH: 31.2 miles
CONSTRUCTION COST: $975,000,000

3 NORTH BRANCH LEG MAINSTREAM TARP SYSTEM
TUNNEL LENGTH: 9.1 miles
CONSTRUCTION COST: $204,000,000

DES PLAINES SYSTEM SUMMARY
RIBUTARY AREA: 34.8 square miles
TOTAL TUNNEL LENGTH: 26.4 miles
STORAGE VOLUME: 1,267 acre-feet
TOTAL CONSTRUCTION COST: $468,000,000

4 NORTH LEG DES PLAINES TARP SYSTEM
TUNNEL LENGTH: 8.9 miles
CONSTRUCTION COST: $172,000,000

5 MIDDLE LEG DES PLAINES TARP SYSTEM
TUNNEL LENGTH: 6.1 miles
CONSTRUCTION COST: $140,000,000

6 SOUTH LEG DES PLAINES TARP SYSTEM
TUNNEL LENGTH: 7.9 miles
CONSTRUCTION COST: $133,000,000

7 WEST LEG DES PLAINES TARP SYSTEM
(SCHEDULED COMPLETION 1988)
TUNNEL LENGTH: 3.5 miles
CONSTRUCTION COST: $23,000,000

CALUMET SYSTEM SUMMARY
TRIBUTARY AREA: 90.8 square miles
TOTAL TUNNEL LENGTH: 36.7 miles
STORAGE VOLUME: 1,638 acre-feet
TOTAL CONSTRUCTION COST: $566,000,000

8 CAL SAG LEG CALUMET TARP SYSTEM
(COMPLETED 1986)
TUNNEL LENGTH: 9.2 miles
CONSTRUCTION COST: $153,000,000

9 LITTLE CAL LEG CALUMET TARP SYSTEM
TUNNEL LENGTH: 7.7 miles
CONSTRUCTION COST: $113,000,000

10 INDIANA AVENUE AND MARKHAM LEG, CALUMET TARP SYSTEM
TUNNEL LENGTH: 6.7 miles
CONSTRUCTION COST: $50,000,000

11 140th STREET LEG, CALUMET TARP SYSTEM
TUNNEL LENGTH: 5.2 miles
CONSTRUCTION COST: $103,000,000

12 TORRENCE AVENUE LEG, CALUMET TARP SYSTEM
TUNNEL LENGTH: 7.9 miles
CONSTRUCTION COST: $106,000,000

13 O'BRIEN PUMP STATION
Construction Cost $41,000,000

14 PHASE II TARP TUNNELS

15 PHASE II TARP RESERVOIRS

Projects of the U.S. Army Corps of Engineers

16 O'HARE CUP RESERVOIR
FLOOD STORAGE: 1,050 acre-feet
COST: Construction – $13.6 million (Federal share) plus $4.5 million (Non-Federal share)
Land – $4,230,000 (MSD, 1974)

17 McCOOK RESERVOIR
FLOOD STORAGE: 32,100 acre-feet
COST: Construction – Estimated – $238,060,000 (COE), $49,740,000 (Local)
Land – Estimated – $29,620,000 (Local)

18 THORTON RESERVOIR
(To Be Combined With George M. O'Brien Reservoir, See Page 25)
FLOOD STORAGE: 14,600 acre-feet
COST: Construction – (Estimated) $59,210,000 (COE); $14,250,000 (Local)
Land – $5,490,000 (Local)

Program Status

TARP consists of two phases. Phase I of the Plan is primarily a water pollution control project. Phase II is associated primarily with urban flood control.

Phase I

Phase I of TARP consists of 110 miles of tunnels ranging in size between 9 feet and 33 feet in diameter constructed 150 to 350 feet below grade in solid rock. These tunnels will intercept combined wastewater from the 645 existing overflow relief outlets by means of 252 drop shafts and convey it to huge pumping stations which will deliver this wastewater to treatment plants. All wastewater will be treated prior to being discharged to the area's waterways from combined sewer overflows. This will result in approximately 85 percent reduction in the total annual discharge of pollutants into the waterways. The estimated cost of Phase I is $2.28 billion. As Phase I of TARP is primarily a pollution control project, the USEPA is providing grant funds for approximately 75 percent of the project cost.

As of January 1, 1984, approximately one-half of the TARP Phase I projects have been awarded. The cost of projects under construction or completed is $1.215 billion, of which $1.14 billion have been paid out to the contractors for work performed. The remaining (unawarded) portion of TARP Phase I has been designed and is awaiting further appropriations of USEPA funds. The estimated cost of remaining TARP Phase I projects is $1.062 billion.

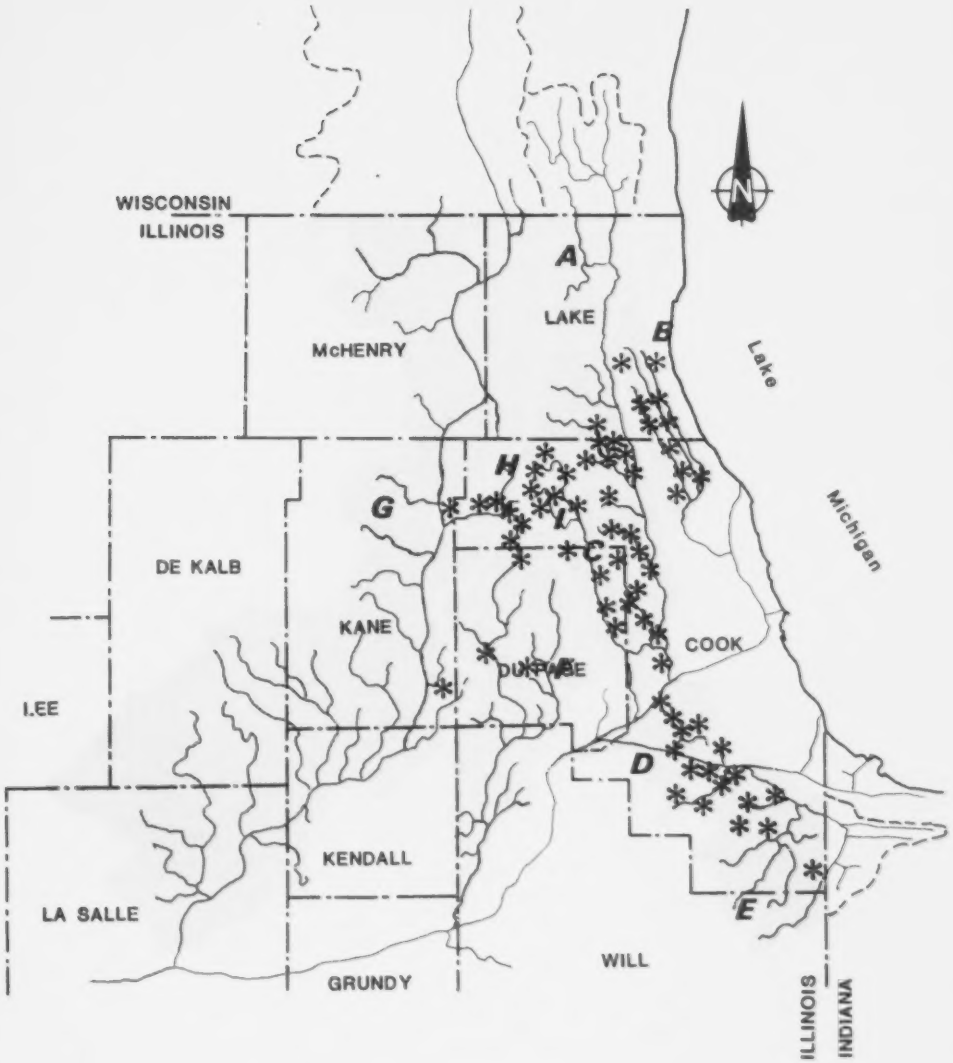
Phase II

The flood control benefits of TARP will be minimal until Phase II is operational. Phase II TARP consists of 21 additional miles of rock tunnels and three reservoirs with a total storage capacity of 127,550 acre-feet. During major storms, the discharge from the tunnels will be directed into the reservoirs for temporary storage and preliminary treatment followed by final treatment in the Sanitary District treatment plants.

Since Phase II is primarily a flood control project and not a pollution control project, authority for its implementation was assigned to the U.S. Army Corps of Engineers by Congress in 1976.

The Corps of Engineers has recommended a reservoir project for the O'Hare System of TARP. In October 1986, the construction of a 1,050 acre-foot O'Hare reservoir, a part of the Chicagoland Underflow Plan, was authorized under the Water Resources Development Act of 1986 at a cost of $18.1 million with the Federal share of $13.6 million and non-Federal share of $4.5 million. The other systems of TARP, Mainstream, Des Plaines and Calumet, have been studied under the Chicagoland Underflow Plan, Phase I General Design Memorandum Study. The final report recommends a single reservoir project for the Mainstream and Des Plaines systems and another reservoir project for the Calumet System. The Calumet system reservoir would be combined with the unconstructed U.S. Soil Conservation Service Little Calumet River Thornton Reservoir. The final report is under review by the Office of the Chief of Engineers.

Watersheds of the Chicago Metropolitan Area



* Floodwater Management Projects

Structural Program Summary by Watershed

		B North Branch Chicago River	C Lower Des Plaines Tributaries	D Cal-Sal Channel	E Little Calumet River	F DuPage River	G Fox River	H Poplar Creek	I Upper Salt Creek
Reservoirs: Volume in Acre-Feet	Planned	5,468	4,769	134	9,600	–	310	–	–
	Constructed	2,000	3,411	189	3,731	2,730	50	208	3,704
	Total	7,468	8,180	323	13,331	2,730	360	208	3,704
Channel Improvements: Length in Miles	Planned	–	6.75	–	7.9	–	1.6	0.26	–
	Constructed	–	–	13.2	2.7	4.1	1.0	–	0.38
	Total	–	6.75	13.2	10.6	4.1	2.6	0.26	0.38
Construction: In $1,000's	Planned	34,202	59,008	2,404	106,885	–	2,300	500	1,500
	Constructed	6,731	33,382	4,600	27,471	5,011	1,195	671	27,967
	Total	40,933	92,390	7,004	134,356	5,011	3,495	1,171	29,467
Land Costs: In $1,000's	Planned	5,426	4,367	–	20,723	–	600	88	–
	Acquired	6,056	24,935	620	8,120	1,345	119	850	25,132
	Total	11,482	29,302	620	28,843	1,345	719	938	25,132
Total Costs In $1,000's		52,415	121,692	7,624	163,199	6,356	4,214	2,109	54,599

Note: Floodwater Management activities in the Upper DesPlaines River Watershed (A) are non-structural and not included in the summary. See pages 34 & 35 for TARP & CUP data.

PART III – Where To Go For More Information

FLOOD CONTROL PROJECTS OF THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO

Metropolitan Sanitary District of Greater Chicago
Flood Control Section
111 East Erie Street
Chicago, Illinois 60611
(312) 751-3240

FLOOD CONTROL PROJECTS OF THE DIVISION OF WATER RESOURCES

Illinois Department of Transportation,
Division of Water Resources
Bureau of Planning
2300 South Dirksen Parkway
Springfield, Illinois 62764
(217) 782-4636

Illinois Department of Transportation,
Division of Water Resources
Chicago Engineering Studies Unit
201 West Center Court
Schaumburg, Illinois 60196-1096
(312) 705-4341

FLOOD CONTROL PROJECTS OF THE P.L. 566 PROGRAM, U.S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE

U.S. Department of Agriculture
Soil Conservation Service
18 Heritage Plaza, Suite 101
Bourbonnais, Illinois 60914
(815) 937-3225

Joliet Field Office
(South Cook-Will Counties)
100 Manhattan Road
Joliet, Illinois 60433
(815) 723-5078

St. Charles Field Office
(Kane-DuPage Counties)
545 Randall Road
St. Charles, Illinois 60171
(312) 584-7960

Palatine Field Office
(North Cook County)
244 East West Court, Suite 140
Palatine, Illinois 60067
(312) 991-1189

Grayslake Field Office
(Lake County)
33040 North Route 45, Suite 205
Grayslake, Illinois 60030
(312) 223-1056

FLOOD CONTROL PROJECTS OF THE CORPS OF ENGINEERS

U.S. Army Corps of Engineers
Chicago District
219 South Dearborn Street
Chicago, Illinois 60604
(312) 353-6400

MISCELLANEOUS PROGRAMS

Stream Preservation Program

Illinois Department of Transportation,
Division of Water Resources
Chicago Engineering Studies Unit
21 West Center Court
Schaumburg, Illinois 60196-1096
(312) 705-4341

Floodplain Regulations

Illinois Department of Transportation,
Division of Water Resources
Bureau of Resource Management
21 West Center Court
Schaumburg, Illinois 60196-1096
(312) 705-4341

Floodproofing Information and Flood Insurance Program

Illinois Department of Transportation,
Division of Water Resources
Local Flood Plain Programs Section
310 South Michigan, Room 1606
Chicago, Illinois 60604
(312) 793-3123

Land Protection Programs

South Cook-Will County Soil and
Water Conservation District
Joliet Field Office
100 Manhattan Road
Joliet, Illinois 60433
(815) 723-5078

Lake County Soil and Water Conservation District
Grayslake Field Office
33040 North Route 45, Suite 205
Grayslake, Illinois 60030
(312) 223-1056

North Cook Soil and Water Conservation District
Palatine Field Office
244 East West Court, Suite 140
Palatine, Illinois
(312) 991-1189

Kane-DuPage Soil and Water Conservation District
St. Charles Field Office
545 Randall Road
St. Charles, Illinois 60174
(312) 584-7960

On-Site Storm Water Detention

Metropolitan Sanitary District of Greater Chicago
Local Sewer Systems Section
111 East Erie Street
Chicago, Illinois 60611
(312) 751-3260

Tunnel and Reservoir Plan (TARP)

Metropolitan Sanitary District of Greater Chicago
Sewer Design Section
111 East Erie Street
Chicago, Illinois 60611
(312) 751-4010

U.S. Army Corps of Engineers
Chicago District
219 South Dearborn
Chicago, Illinois 60604
(312) 353-6400

Floodplain Management Services

U.S. Army Corps of Engineers
Chicago District
219 South Dearborn
Chicago, Illinois 60604
(312) 353-6400

Cooperating Agencies

Addison
Addison Creek Conservancy District
Alsip
Arlington Heights
Arlington Heights Park District
Aurora
Bannockburn
Bellwood
Bloomingdale
Blue Island
Broadview
Brookfield
Buffalo Grove
Calumet City
Cal-Union Drainage District
Chicago Heights
Chicago Ridge
City of Chicago
Cook County
Cook County Forest Preserve District
Country Club Hills
Crete
Crestwood
Deerfield Park District
Des Plaines
Drainage District #2
DuPage County
DuPage County Forest Preserve District
East Chicago Heights
East Skokie Drainage District
Elgin
Elgin Sanitary District
Elk Grove
Elk Grove Park District
Elmhurst
Elmhurst Park District
Flossmoor
Franklin Park
Glenview
Glenwood
Gurnee
Hanover Park
Harvey
Hazelcrest
Hazelcrest Park District
Hickory Hills
Highland Park
Highland Park Park District
Hinsdale
Hoffman Estates
Homewood
Homewood-Flossmoor Park District
Itasca
Kane-DuPage Soil & Water Conservation District
Kenosha County, Wisconsin
Kenosha County, Wisconsin Soil & Water Conservation District
LaGrange
Lake Bluff
Lake County
Lake County Forest Preserve District
Lake County Soil & Water Conservation District
Lake Forest
Lansing
Lansing Park District
Libertyville
Lincoln-Lansing Drainage District
Lincolnshire
Long Grove
Lynwood
Lyons
Markham
Markham Park District
Matteson
Melrose Park
Metropolitan Sanitary District of Greater Chicago
Midlothian
Mt. Prospect
Niles
North Brook
North Chicago
North Cook Soil & Water Conservation District
North Skokie Drainage District
Northeastern Illinois Planning Commission
Northfield
Northlake
Oak Brook
Oak Forest
Oak Lawn
Olympia Fields
Orland Park
Palatine
Palatine Park District
Palos Heights
Palos Hills
Palos Park
Park Forest
Park Forest South
Prospect Heights
Richton Park
Riverdale
Riverside
Robbins
Rolling Meadows
Roselle
Salt Creek Rural Park District
Sauk Village
Schaumburg
Schaumburg Park District
Southeastern Wisconsin Regional Planning Commission
South Chicago Heights
South Holland
State of Illinois, Department of Conservation
State of Illinois, Division of Water Resources
State of Illinois, Water Survey
Steger
Streamwood
Thornton
Tinley Park
Tinley Park District
Union Drainage District #1, #2, and #4
U.S. Army Corps of Engineers
U.S. Department of Agriculture, Soil Conservation Service Villa Park
West Skokie Drainage District
West Haven
Weller Creek Drainage District
Westchester
Western Springs
Wheeling
Wheeling Park District
Will County
Will County Forest Preserve District
Will South Cook Soil & Water Conservation District
Wilmette
Winnetka
Wood Dale
Wood Dale Park District
Worth
Lower Des Plaines Tributaries Watershed

Senator FOWLER. We will welcome Senator Christopher "Kit" Bond from Missouri, who has joined us, and he is invited to jump in at any time.

STATEMENT OF HON. CHRISTOPHER S. "KIT" BOND, A U.S. SENATOR FROM MISSOURI

Senator BOND. Well, thank you, Mr. Chairman. I certainly commend our witnesses today, and the distinguished senior Senator from Illinois who sponsored this project.

In reading the materials, I do share the Chairman's concern about our priorities, and whether we should be funding essentially urban flood control projects with funds apparently intended to stop soil erosion. As your neighbors just to the west of the Mississippi River, we have found that soil erosion is a very serious, long-term environmental problem; it is a problem not only for our farmers currently, but it is a problem for future generations.

While I can certainly understand the concern that the flooding has caused and the damage that this has done in your area, I do think that we have a responsibility to examine our priorities on this subcommittee, and to be clear what we are spending for erosion control and what we are spending for urban flood protection.

I note in your statement that you felt that moving this to the Corps' jurisdiction would cause a delay. I can understand that very practical viewpoint, because we have a number of areas in our State where flood control is a top priority; it means loss of dollars and even danger to lives.

Have you had the opportunity to consider or do you have any suggestions for us other than the pragmatic reason of the potential time delay, why this and similar plans in the future should be handled in this realm rather than by the Corps or by some other funding agency?

Mr. VONNAHME. Senator Bond, I think the primary reason is the delay. The only quick comment I could give on your long-term concern would be what Mr. Fulton said previously. I do not know if you heard Mr. Fulton from my staff advising that we had been working with the Washington level offices of Agriculture and some of the congressional committees in determining what some reasonable percentage of argricultural benefits might be in a project that heretofore would use P.L. 566 funds. It could be set at 20 percent or 30 percent or 90 percent, whatever, but some percentage of the total project benefits. That would be a way of dealing with it in the future.

I feel put upon, actually. I am a water director from the hinterlands. We put our money where our mouth went, and we negotiated in good faith with a plan. I just do not want to go through 10 years' delay, when people are paying hard—I don't know if you heard the testimony talking about the flood we had last fall. I didn't notice when you came in, but we suffered about $35 million of damages on this watershed last October, and I just don't feel we can wait 10 years to switch horses here. I think too much has been committed up front by the non-Federal sponsors already.

Senator BOND. I certainly can understand your concern about the delay, and you have already gone down this track. But I do think,

as the Chairman has mentioned, that we are going to have to take a look at the priorities in the future, because that same flood washed out levies and caused a lot of—the rains that brought about your flood caused a lot of havoc in our State, and substantial soil erosion.

Thank you, Mr. Chairman.

Senator FOWLER. Thank you.

Mr. KIRIE. Mr. Chairman, I would like to answer one question. 25 percent is rural and farm area in the Forestry Service. You asked about that; that's quite a bit.

Before I start my testimony, I would like to impress you with the fact that I have spent my entire 76 years in this particular area. I was raised with it——

Senator FOWLER. Looks like we ought to raise the mandatory age.

Mr. KIRIE. Well, I would like to say this to you, sir, that every great historical catastrophe that has ever befallen mankind has never been solved by a man under 65. They had to call on men like de Gaulle, Churchill, Adenauer; Mrs. Golda Meir, the Israeli Prime Minister. I think that when age becomes a factor, you are losing something very dear. Because with age comes wisdom, and I feel in my 76 years I have a lot more to give in public life.

I have held public office for 56 years. I was elected to office at age 20; I waited until I was 21 to take office.

So may I continue?

Senator FOWLER. You may continue.

Senator BOND. Mr. Chairman, I think we had best adjourn until we can get somebody here who is qualified. [Laughter.]

We would about make that if we add the years up.

STATEMENT OF JAMES C. KIRIE, CHAIRMAN, COMMITTEE ON FINANCE, BOARD OF COMMISSIONERS, METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO, ACCOMPANIED BY AYOUB TALHAMI, PROJECT ENGINEER, METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO

Mr. KIRIE. Gentlemen, I am delighted to appear before you today to express the strong and total support of the Metropolitan Sanitary District of Greater Chicago for the Lower Des Plaines tributaries watershed plan.

For many years, our area has been ravaged and the citizens have been traumatized by flooding which occurred repeatedly and almost with predictable regularity. Watching an oncoming disaster charge toward you, and knowing that you are helpless to avoid its onslaught, is not only traumatizing but also terrorizing.

It has been only 8 months since the area was declared a disaster area following the raging storm of September and October 1986, when the Des Plaines River rose and overflooded its banks into neighborhoods, hospitals, schools, municipal facilities and shopping centers in 20 Cook County municipalities, causing damages estimated at $35 million. If this plan had been implemented and its elements were operational, much of the trauma and the financial damages would have been avoided. Sadly, this was not the case, and one cannot help but note that the Federal share for the con-

struction of the entire watershed plan is only $35 million, which is the same as the amount of damages sustained by the area due to a single major storm.

I and other commissioners on our board have met with all the mayors in the area, and all have expressed support for this plan, which is designed to protect 2,497 residential units and 203 businesses, commercial and public buildings from flooding. It will reduce annual floodwater damages by $7,800,000 and improve the use of thousands of acres of forest preserve lands along the river.

The watershed plan contemplates structural and nonstructural measures. The structural measures consist of five reservoirs and four channel improvements, at a total cost of $54 million, of which the local sponsors have expended or will expend $19 million. The nonstructural measures include stream preservation programs which will be undertaken totally by the local sponsors. The residents of our area are more than willing to make their contribution in order to solve their problems. Our verbal expression of support for the watershed plan is coupled with our pledge to discharge our responsibilities and place our own resources behind the implementation. Indeed, substantial financial and other commitments have already been made by the local sponsors.

The Metropolitan Sanitary District has secured the land rights for which it was named a sponsor at a cost of $2 million. Two of the reservoirs have been preexcavated; namely, Northlake Reservoir, structure 86, and Franklin Park Reservoir, structure 106. Although no preexcavation was envisaged by the plan for the Silver Creek Reservoir, structure 102, the Metropolitan Sanitary District took advantage of the opportunity that arose in 1983, to preexcavate approximately 50 percent of the volume required for the reservoir, and thus reduced the construction cost by approximately $2 million. In addition, the Illinois Division of Water Resources has secured the land rights and is proceeding with the construction of the Spring Brook Reservoir, structure 5, at a cost of $7 million.

Over the years, the Metropolitan Sanitary District and the Illinois Division of Water Resources, together with other units of local governments, have constructed and funded 21 projects costing $66 million in this watershed, other than those projects contemplated by this plan.

The Metropolitan Sanitary District and the other local sponsors, collectively and individually, have already made substantial commitments toward the plan and they eagerly look forward to its approval and implementation. We therefore urge timely approval and subsequent funding of this much needed watershed plan.

Mr. Chairman, the last or the previous 8 months were the most devastating thing I ever saw in my life. The ancient Greeks once said that there are three things that you can't control when they go on a rampage. Number one is fire, and it is very necessary to mankind; we cannot live without it. The next thing that goes on a rampage are women. When women go on a rampage, nothing stops them. But they are so necessary to life. The next thing is water. When water goes on a rampage, nothing stops it, but it is so necessary to life.

That comes from the ancient Greeks; when those three go on a rampage, God help all of us. Please help us.

Senator FOWLER. The only trouble with those ancient Greeks is they did not get their priorities in order. [Laughter.]

Let me ask you, and then we must go to the next panel. In the days of my misspent youth, I was a city council president, and so I come out of local government, and I know these problems of flood plains and we are long past this, but I want to ask it anyway.

In Chicago, or anywhere else that you know of, are there any municipal discouragements to individuals or businesses building in the flood plain?

Mr. VONNAHME. I will try to respond to that.

Senator FOWLER. What do you do in Chicago?

Mr. VONNAHME. In the city, we do have flood plain construction regulations. We also work with the Federal Emergency Management Agency in the Federal Flood Insurance Program. Most of our communities in Illinois are members of that particular program.

When we do structural studies like this, Senator, we do a lot of hydraulic work on the streams. We calculate the flood water profiles in the streams for what happens in the 2-, 50- and 100-year floods. We and our communities can use this information to regulate construction in the flood plains. So even though we are doing all these structural flood control studies, once we see what the limit of the flood plain is, our local municipalities use this information to regulate construction in their floodplains.

We have some State statutes, but the actual enforcement of local flood plain development ordinances and regulations is done at the community level in Illinois, or the municipal level would be the equivalent in your State. And yes, they do bite the bullet very hard.

The Sanitary District, on the other hand, in their area of jurisdiction; and Jim, if I may speak for you, also has on-site retention ordinances, so that even though people are not building in the flood plain, if you do develop out of the flood plain and you convert perhaps land to parking lots and streets and roads and you increase the runoff, you have to store that runoff on your property, or get with a group of people and store it, so you don't aggravate the existing condition.

In Illinois we do not have State land use control. That is done at the municipal level. So yes, municipal regulation is done actively in our State.

Mr. KIRIE. In the Metropolitan Sanitary District, you cannot build in our area unless you have retention, anything over 6 acres; and you have to store your water. And I also would like to say that these structures here are not in Chicago. They are in the rural areas that we are talking about.

Mr. FULTON. Mr. Chairman, on the regulations we have, they are based on what we call a future development condition. So, not only have we considered the land use that exists today, but made our best estimate on what the future land use was, based upon comprehensive plans of municipal and county officials, so that we did not find that in the future because of development more water came off, therefore expanding the flood plain.

Senator FOWLER. But in your plan, I see that you are claiming increased development opportunities.

Mr. FULTON. Yes.

Senator FOWLER. These are opportunities outside of the flood plain?

Mr. FULTON. No, those are opportunities that are in the existing flood plain. The situation that exists is that most of the flood plain, and you can see that by the number of homes and commercial-industrial buildings in it had been developed over the past 30 to 40 years. There is some undeveloped land in the flood plain which basically resides between existing residential buildings and existing commercial buildings. There will be a land intensification benefit for these properties. The project simply isn't built for that purpose; it's an incidental benefit and the project still has a cost-benefit ratio of greater than one, even if that was not counted. But under the present guidelines for the program, it was counted as an appropriate benefit.

One of the things that was very obvious in a flood that we had in October 1986, was that there was no damage to businesses, commercial or industrial development that occurred since 1978, which is when we enacted flood plain regulations.

So I think we are getting success with that program, but we still have some bad practices that occur in the Greater Chicago area. I am sure they did in Atlanta, in the postflood period; and that's what we're trying to fix.

Senator FOWLER. Gentlemen, thank you very much.

Mr. TALHAMI. Mr. Chairman, if I may, I have a couple of comments to supplement some of what has been said on the issue, and there are three questions raised.

Senator FOWLER. Please identify yourself.

Mr. TALHAMI. Ayoub Talhami with the Metropolitan Sanitary District. I am the project engineer for flood control.

Three issues were raised; the question of erosion control; the question of the plan itself; and the question of the Corps of Engineers. Let me supplement some of the information, if I may.

This plan is the last watershed plan in the area in which the SCS is involved. We have had two watershed plans; one of them has been completed; one of them is under construction right now and should be completed in about a year. This represents the last one of the watershed plans.

All of the watershed plans have involved cooperation by local agencies in which all of them have made commitments and expenditures toward completion of the plans. There will be no other watershed plan coming to the SCS from the metro area.

The next issue is one which has been raised right from the beginning. Let me point to a couple of statements in the book. I am sure you have it there; the watershed plan.

On page 46 of the environmental impact statement of the final watershed plan a statement is made regarding erosion control on 228,000 acres of the watershed, and the total watershed is 224,000 acres. Now, two things should be mentioned here: Number one, this is an urbanizing area. If it is left without control, the degree of aggravation of soil erosion will continue to go on forever.

On page 24 of the same plan, table C, it explains what are the priorities identified and concerns identified for the watershed plan; and item 5 is the erosion and sediment control. That is identified as high priority. Now this issue, the erosion control, was assumed

in the plan to be taken care of by local governments through regulatory means and through training, and through ordinances and through river basin protection.

It was not quantified in terms of benefits, nor is it part of the push of this plan—it was assumed to have been borne by the locals which, as Mr. Vonnahme has said, we have proceeded from that basis from that time.

Another assumption made in the plan is 21 projects that were totally funded by local municipalities, 27 local municipalities and 2 lead local agencies, at a cost of $67 million. And those two items have been assumed to have been in place by this plan. Otherwise, this plan would have been much bigger and more costly than it is at this time.

The third item I want to mention is the Corps of Engineers involvement, and this was touched upon. Let me say this, of the 244,000 acres, 25 percent is either agricultural or forest preserve, and these would be enhanced by the addition of the reservoirs themselves and the additional stream preservation in that area.

Of that also, 50 square miles are so-called combined sewer areas, which are the more densely developed areas. And that is where the Corps of Engineers is coming into the picture. Now, some mention was made that the Corps of Engineers wouldn't want to touch it; but the Corps was brought in at some later time, in connection with the Chicago Metro Tunnel and Reservoir plan, to have the combined sewage overflows in compliance with the Water Pollution Control Act.

We have developed such a plan, and there was some controversy surrounding it, which eventually led Congress to direct the GAO to make a study; and the GAO did make a study of which the Corps of Engineers sort of was drawn into the picture, if you will, to handle the flood control aspects of the pollution control plan.

In this particular watershed the Corps of Engineers is involved in two projects, totaling $20 million. Now there is a document under this title, "Our Community and Flooding," a report on the status of floodwater management in the Chicago metropolitan area, 1987, [indicating] and the subcommittee has been furnished copies. Beginning on pages 18 and 19 is a list of the projects in this area and the agencies sponsoring them; and I refer to items 30 and 31, the two projects undertaken by the Corps of Engineers in this particular watershed. So while the Corps did not get involved at the beginning, it was mandated by Congress to get involved to this extent.

So now there is involvement by two Federal agencies; the Corps to the tune of $20 million, and the SCS to the tune of $35 million; and the rest would be expended by the local governments.

[The published document, "Lower Des Plaines Tributaries Final Watershed Plan—EIS, June 1985," is retained in the subcommittee file.]

Senator FOWLER. Thank you, Mr. Talhami. That was very helpful.

Mr. TALHAMI. Thank you very, very much.

Senator FOWLER. Thank you, gentlemen, for your very fine testimony, and I do commend you all for the degree of State and local participation in your plan.

[Material submitted by the Metropolitan Sanitary District of Greater Chicago regarding the Lower Des Plaines tributaries watershed plan follows:]

Additional Information Submitted by the Metropolitan Sanitary District of Greater Chicago Regarding the Lower Des Plaines Tributaries Watershed Plan

This memorandum is to follow up on some of the issues raised during the Senate Agriculture's Subcommittee on Conservation and Forestry hearing on the Lower Des Plaines Tributaries Watershed Plan on June 17, 1987.

Soil Erosion and Sediment Control Benefits

One issue which was raised during the hearing, and one we would like to elaborate on here, is the high priority that was placed in the early stages of the Lower Des Plaines Tributaries Watershed Plan's (Plan) development on the need to reduce soil erosion and sedimentation damage. Because it was recognized early on during the consideration of Plan alternatives that sediment control and soil erosion control were significant problems not only in the watershed, but downstream as well, an important non-structual component to address these issues was added to the overall plan. Sponsors and planners were quick to understand that most erosion occurs when major flooding events happen. In fact, with any flooding, erosion also occurs. Therefore, any flood control project is inherently an erosion control measure, as well. In addition, the Plan's non-structual component dedicated to erosion control and sediment reduction is a 2-part package namely, the Land Protection Program, and the Stream Preservation Program. The Land Protection program envisioned in the Plan consists of Public Law 566 technical assistance to provide training to local governmental staff and others in soil erosion and sedimentation control ordinance implementation. This program requires the

expenditure of $1,031,200 over a 5-year period, with P.L. 566 funds providing $920,700 and local funds providing $110,500. The program is intended to reduce erosion and sedimentation damage and provide the basis for improved use of the resources. The technical assistance will help to establish self-sustaining technically-qualified local expertise. It is important to note here, that the technical assistance provided in the Plan will reduce erosion on 228,150 acres.

In fact, we understand that not only is this package a key element of the overall plan, it is in part a precondition for receiving federal construction funds from USDA. It is the case here that seventy-five percent of the municipalities in the watershed area must adopt soil erosion and sediment control ordinances for land in their jurisdiction before the project is funded. The state has been working hand-in-hand with the municipalities to develop these ordinances and this percentage has been reached. At this time the following municipalities have ordinances in various stages of implementation: Arlington Heights, Bensenville, Bloomingdale, Buffalo Grove, Burr Ridge, Deer Park, Des Plaines, Elk Grove Village, Elmhurst, Glenview, Green Oaks, Hinsdale, Itasca, Kildeer, Lake Zurich, Libertyville, Lombard, Long Grove, Mt. Prospect, Mundelein, North Lake, Oak Brook, Palatine, Prospect Heights, Riverwoods, Rolling Meadows, Roselle, Schaumburg, Vernon Hills, Villa Park, Westchester, Westmont, Wheeling, Willowbrook, and Wood Dale. In addition, ordinances are in effect within unincorporated areas of Cook, DuPage, and Lake Counties.

The last key point we raise under this issue is that in order to get a true picture of the soil erosion control benefits provided in the watershed, we need to look beyond just the Land Protection program provided in the Plan. In recognition that sedimentation will continue to degrade our streams and our topsoil will be lost at an exceedingly high rate unless abated, the State of Illinois has already contributed $13 million to sediment control measures. However, this $13 million is not sufficient by itself to address the growing problem. The watershed needs installation of the entire Plan to produce the benefits envisioned by the sponsors. We believe this $13 million contribution outside of the Plan's investments should be factored into the overall Plan's erosion control package to identify the true erosion control benefits to the watershed.

Benefits Outside Chicago

Another important point which was raised during the hearing and deserves fuller consideration is the fact that over thirty-seven percent of the watershed area to be protected by the project is in agricultural, forest preserves, and other non-urban land uses. Therefore, with the approval of this Plan, we will be putting in place a project which will not only protect the outlying suburban communities, but will address the flood and erosion control needs of agricultural and vast forest preserve lands which are increasingly important to the health and well-being of citizens in areas close to metropolitan Chicago.

In the watershed area, sixty-eight municipalities outside the City of Chicago will benefit from the Plan. The range in population of these municipalities varies from 1,400 to 66,000, and fully 56 of these municipalities have populations which are under 30,000. Therefore, there is a whole network of small cities and towns who are dependent on this project to provide the flood and erosion relief that they otherwise could not afford themselves.

The Sanitary District believes it is important to identify that a good portion of the protection and benefits outlined in this Plan will accrue downstream of the metropolitan area. The benefits provided downstream primarily will be two-fold. First, the Plan will reduce overbank flooding by retaining the flood flows in the excavated flood water reservoirs until release at a later date. In this way we are preventing the "wall of water" effect downstream through effective upstream management. Secondly, the Plan will reduce the amount of sedimentation flowing into the waterways downstream which feed into the Illinois River. Erosion, and the sedimentation problems it presents for the watershed, usually originates on agricultural lands, idle lands awaiting urban development and urban construction sites. The movement of material off the land and into the watercourses presents many problems. Storm drains, culverts, and drainage ditches become obstructed and lose their ability to adequately convey storm and floodwaters. Maintenance costs are greatly increased by the loss of drainage capacity which must be restored to protect the health and welfare of the population. This results in a limitation of the streams for flood management, recreation and aesthetic purposes.

The Plan however addresses these problems in a non-structural way through a two-fold program. First, the Land Protection Program was included to address erosion and sedimentation problems originating on urbanizing land. Second, the Stream Preservation Program which will be sponsored by the State and implemented by the locals, includes stream maintenance, clearing and periodic removal of sediment deposits. It was included to address two concerns which rated high in the decision-making process of plan formation. First, there is currently no systematic approach to maintain stream capacities in the watershed. Without such a program, stream capacities will decrease in the future resulting in increased flood damages. Second, in the past, political fragmentation and lack of coordination have hindered effective floodwater management. A stream preservation program would contribute significantly to floodwater management cooperation. Both non-structural programs will provide long-standing benefits to our neighbors downstream.

In closing, the Watershed Protection and Flood Prevention Act (Public Law 566, 83rd Congress) as amended (16 U.S.C. 1001-1008), provides for cooperation between the Federal Government and the states and their political subdivisions in a program to prevent erosion, flood-water and sediment damage in the watersheds or rivers and streams. There is no bias in the Act toward projects either urban or rural, and there is nothing in the Act to pre-empt this type of project. The project is well within the scope of the law. This Plan has been approved twice by USDA, once by OMB and the House Agriculture Committee, the congressional delegation supports it, the design is done, the land has been bought - we are ready to move forward. We appreciate your consideration of our views, and we look forward to the timely approval of the Plan by this Committee.

Senator FOWLER. We will now hear from Mr. Edward R. Osann, Director, Water Resources Program of the National Wildlife Federation; and Mr. Robert Gray, senior associate for policy development, the American Farmland Trust.

STATEMENT OF EDWARD R. OSANN, DIRECTOR, WATER RESOURCES PROGRAM, NATIONAL WILDLIFE FEDERATION, WASHINGTON, DC, ACCOMPANIED BY SUSAN PULTZ

Mr. OSANN. Thank you, Mr. Chairman. My name is Edward Osann and I am the Director of the Water Resources Program for the National Wildlife Federation. Accompanying me here today is Susan Pultz from our staff, who has assisted in our review of this project.

I have a prepared statement which I will not attempt to read into the record. I will attempt to summarize it.

Senator FOWLER. We will make it part of the record.

Mr. OSANN. Thank you, Mr. Chairman.

I would like to preface my remarks by expressing appreciation of conservationists and the subcommittee's willingness to hold a hearing on this issue, and to explore the implications of the Lower Des Plains project for the P.L. 566 program in general. I think the time is right for this kind of review, and we very much appreciate your interest, Mr. Chairman.

Certainly, we do not have to tell this subcommittee about the importance and gravity of soil erosion in this country, with the record of accomplishment that you have with the conservation title of the farm bill. There is a clear recognition by this committee of the importance of this whole issue, and that is our concern in this matter as well.

Let me also point out how we came to take interest in this project. The National Wildlife Federation maintains as an ongoing program the review of SCS small watershed projects that are in the planning stage. We undertake the review of probably 10 projects a year, and have done so over the last 5 or 6 years, and in the course of that analysis of draft watershed plans and their draft environmental impact statements, a number of general conclusions have emerged.

One is that the program as a whole is still expending a good deal of money and a good deal of effort on flood control, and that soil erosion control and sedimentation reduction, while dealt with in many watershed projects, are also a very minor and incidental component in many others.

It tends to be the case that the flood control features and flood control elements of these projects tend to be the most environmentally problematic. Dam building, channel work, channelization, other kinds of channel work tend to be the most environmentally troublesome, rather than watershed and land treatment measures that are most commonly employed for strict erosion control purposes in these projects.

With regard to——

Senator FOWLER. But in this case we have already got intensive development activity taking place.

Mr. OSANN. That is correct, Mr. Chairman.

Senator FOWLER. So what do we do?

Mr. OSANN. Well, a couple points. The previous witnesses indicated that when all was said and done, the reason it was important not to stay with the SCS on this was primarily the delay element, and there has been an experience in the Chicago metropolitan area with the North Branch of the Chicago River.

Let's be clear about what the problem was with delay on the North Branch of the Chicago River. It was authorized as a Corps project in 1986 because the Congress and the administration had not been able to agree until that time on the basic cost-sharing and user fee policy for the Corps program.

We had gone, as you recall Mr. Chairman, for a 10-year period without enacting any major authorization for the Corps of Engineers. Now, Congress has bitten the bullet; that milestone in establishing the cost-sharing policy under the Corps program has been passed, and cost-shared projects are now enjoying the support of local sponsors all around the country; and the Corps program is moving forward; and it is quite likely that the 100th Congress will be able to enact additional authorization legislation for the Corps of Engineers based upon new policies that are now in place.

So because we had a 10-year delay in the past due to this impasse over basic policy issues regarding cost-sharing and user fees, does not mean it is going to be another 10 years before the Senate Committee on Environment and Public Works and the House Committee on Public Works and Transportation can bring to the floor legislation dealing with additional authorizations for the Corps.

I do not want to leave the impression, and I trust that our testimony does not leave the impression, that the Lower Des Plaines project is the worst offender from an environmental standpoint that we have seen in the SCS program; that is far from the case. There are projects currently in the planning phase that are very environmentally troublesome.

In this case, the Lower Des Plaines, I think our principal remaining area of concern has to do with flood plain encroachment and intensified development. Clearly this project will constrict the existing flood plain and encourage development of land that is now currently in the flood plain. It is quantified as an economic benefit; it is claimed as a benefit for the project.

Flood plain encroachment is really what the problem is in this watershed with regard to flood control. One of the previous witnesses indicated that the local communities had bitten the bullet very hard on flood plain development, and I think that the committee's record of this would be more complete if there were some documentation as to the area within the flood plain, the area within the—that was subject to the 100 year flood that took place last fall, how much of that property that was subject to damage had actually been permitted for construction, either since 1978 when the regulations went into place, or just as appropriately, since 1968, which is the date of enactment of the Federal Flood Insurance Act, and really gave the impetus to, and put local communities on notice of the need for, local flood plain protection in their communities.

I think that as to the remedies that might be available to us at this point in a developed watershed, this is clearly within the area of responsibility of the Corps. I do not think there can be any ques-

tion, any assertion made here that Congress could not authorize the Corps of Engineers to implement this project as a Corps of Engineers project.

Notwithstanding any interagency agreements that may have been reached in the past, what the SCS has presented is a feasibility grade planning report that is comparable to feasibility grade reports used by the Corps.

Senator FOWLER. Well, we will be asking the Corps for the record, for their views on the overall project; whether or not they can take over the project; whether or not there will be delays; all the questions raised by the proponents of the plan earlier.

Mr. OSANN. We would welcome that, Mr. Chairman.

Senator FOWLER. What other nonstructural, do you have any idea of any other nonstructural alternatives that could be pursued in this plan? Other than what is proposed?

Mr. OSANN. The plan proposes, as a locally financed activity, an activity that should really be freestanding, the idea of stream protection, stream preservation. And it certainly is important to be able to maintain the carrying capacity of the Channel itself. I guess we would take a broader view of that, and look for flood plain protection; to be able to maintain the carrying capacity of the flood plain itself.

We do not believe that the areas that are slated available for additional development, it is sensible public policy to invest money in to draw new development into the flood plain; and I think we would be looking for more rigor in the application of flood plain protection statutes, floodproofing, selective relocation, those kinds of what are considered to be nontraditional or predominantly nonstructural elements of the plan.

[The prepared statement of Mr. Osann follows:]

Working for the Nature of Tomorrow

NATIONAL WILDLIFE FEDERATION

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STATEMENT OF EDWARD R. OSANN
DIRECTOR, WATER RESOURCES PROGRAM
NATIONAL WILDLIFE FEDERATION
BEFORE THE
SUBCOMMITTEE ON CONSERVATION AND FORESTRY
SENATE AGRICULTURE, NUTRITION AND FORESTRY COMMITTEE

JUNE 17, 1987

My name is Edward R. Osann and I am the Director of the Water Resources Program for the National Wildlife Federation. The Federation, with over 4.6 million members and supporters nationwide, is this nation's largest conservation organization. The Federation and its affiliates have long had an interest in soil conservation, which addresses one of the most critical resource problems in our country. We have made it a practice to review projects drafted under the Soil Conservation Service's Small Watershed Program, and have found several major deficiencies in the particular plan that we are discussing today. In addition, we have discovered over the years that relatively few of the dollars spent on small watershed projects lead to major reductions in soil erosion or sedimentation -- the main problem that we feel the program was meant to address. The proposed project for the Lower Des Plaines Tributaries Watershed is a prime example of these projects, which involve millions of dollars of limited funds available to SCS under PL 83-566 and do little to alleviate the problem of soil erosion. The National Wildlife Federation opposes the authorization of the Lower Des Plaines Tributaries Watershed Plan by the Senate Committee on Agriculture.

THE PLAN DOES NOT REFLECT CURRENT NATIONAL PRIORITIES FOR SOIL CONSERVATION.

The foremost objective of the USDA's Soil Conservation Service (SCS) should be the reduction of soil erosion on our nation's cropland and its resulting sedimentation and non-point pollution in our nation's waterways. Soil erosion is a pervasive and threatening environmental problem with erosion rates significantly exceeding replacement levels on America's cropland. Under these circumstances, NWF and its affiliates do not feel that the SCS should give priority to flood control over soil erosion control and sedimentation reduction. Structural flood control projects are more appropriately administered by agencies such as the U.S. Army Corps of Engineers' civil works program. The Lower Des Plaines Tributaries Watershed project would be one of the largest ever undertaken by the SCS -- costing over $56 million. Yet a mere 2 percent of these funds is earmarked for reducing soil erosion and sedimentation.

ALTERNATIVE PLANS WERE NOT ADEQUATELY FORMULATED OR CONSIDERED.

Current procedures in the formulation of small watershed projects require that alternative plans be formulated in a systematic manner to ensure that all reasonable alternatives are evaluated. The Lower Des Plaines Tributaries plan presented two easily dismissed alternatives to the recommended plan. One contained the same structural measures as the recommended plan but didn't include the stream preservation program or the technical assistance to local governments. The other was the "no-action" alternative. The Final Plan/EIS for this project responded to NWF's comments by stating that all "reasonable" alternatives were discussed prior to the formulation of the proposed alternatives and that most nonstructural alternatives have been implemented. Yet certainly, in some of the relatively undeveloped areas on the fringe of the floodplain, nonstructural techniques such as changes in zoning laws, flood-proofing and relocation can be combined with structural measures. This would cut down on the costs of the project, lessen the disturbance to wildlife habitat which is invariably lost or changed when structural measures are taken, and allow the hydrologic and biological functions of floodplains to take place to the greatest extent possible. NWF does not believe that all reasonable alternatives to this plan were developed, displayed, and evaluated carefully.

THE PLAN ENCOURAGES INTENSIFICATION OF FLOODPLAIN DEVELOPMENT.

Development on floodplains should not be encouraged. The Final Plan/EIS stated that in some areas of the watershed "decreasing the floodway area through reduction of the 100 year peak discharge would provide an opportunity for development and more intensive use." (p. 21). Indeed, in Table C, which lists identified concerns addressed by this proposed project, the ninth concern is that "flood hazard limits the use of floodplain land and reduces its value". It is the nature of a floodplain to be subject to periodic flooding. Moreover, the natural functions of floodplains are crucial to the integrity of the environment. New development should not be encouraged in these areas, in order to maintain this integrity as well as to prevent further flood control and drainage measures from becoming necessary in the future. If certain areas of this floodplain weren't intensively developed initially, a $56 million project would not be proposed at present. Such measures, whether taken now or later, are taken at the taxpayer's expense. At a time when we are facing the consequences of a tremendous Federal deficit, such large expenditures should be scrutinized carefully.

Furthermore, the viewpoint that undeveloped floodplain land would be better utilized by development is inconsistent with the objective of Executive Order 11988. E.O. 11988 directs Federal agencies " ...to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative." The avoidance of floodplain development has been well heeded in the Chicago metropolitan area in some instances as indicated by measures such as the forest preserve program. However, it must be applied in each case in which a Federal agency conducts activities in a floodplain. Clearly, the results of the proposed project and the goals of this order are contradictory.

CERTAIN STATED BENEFITS REMAIN IN QUESTION.

No environmental benefit is derived by reducing floodplain area. Yet "reduced area subject to flood plain regulation" (p. 48) is listed as an environmental benefit in the Final Plan/EIS for this

project. This may be convenient for developers, and may even be considered necessary where intensive development has taken place already. However, the drainage and development of even peripheral portions of the floodplain is not environmentally beneficial.

As stated before, floodplains serve a multiplicity of important purposes -- all of which are that much more important when adjacent to urban areas or developed floodplains. Undeveloped floodplains serve to moderate floods by reducing the rate of surface stormwater runoff and increasing water storage whereas developed floodplains contribute to runoff. Undeveloped floodplains also recharge aquifers, often at a rate of hundreds of thousands of gallons per day per square mile, which expands the groundwater supply for human use and augments low stream flows during dry periods. Perhaps floodplains' most important function is their renovative capability. They are acknowledged cleansers of water through the filtering action of soils and vegetation. All this is in addition to their naturally high biological productivity, and their enhancement of wildlife habitat.

Some benefits claimed in the Land Protection Program are uncertain. The Final Plan/EIS for this project states that the Land Protection Program outlined in this project would include technical assistance provided by the Illinois Department of Conservation, Division of Forestry, in cooperation with the U.S. Forest Service. It also states, however, that the forestry part of the Land Protection Program is "dependent on the availability of manpower for this purpose and appropriation of the necessary funds," presumably by local entities. It is unclear whether or not this important benefit will be achieved.

In addition, it should be pointed out that most of the environmental and flood damage reduction benefits derived from features of the Land Protection Program and the Stream Preservation Program -- such as soil erosion control, maintenance of stream capacity and vegetation management -- are not directly related to the rest of this project. These measures are separate from the structural components of the project and the benefits could be achieved without the recommended project's implementation. They should be considered with or without the project.

THIS PROJECT SHOULD NOT BE APPROVED FOR IMPLEMENTATION WITH P.L. 566 FUNDS.

Numerous shortcomings have been identified in the proposed plan for the Lower Des Plaines Tributaries Watershed. Without further evaluation and modification, this project should not be approved for the following reasons:

* Only two action alternatives were presented and both contained structural features identical to the one proposed. A wider range of alternatives, including predominantly nonstructural alternatives, should be displayed.

* Intensification of floodplain development is encouraged in this plan. This is not only contradictory to the objectives of Executive Order 11988, but it is environmentally deleterious as well.

* The attainment of certain stated benefits, specifically those targeted by the Land Protection Program, remains uncertain.

In addition to our concerns about this particular project, however, NWF is concerned with the tendency to expend P.L. 566 funds on structural flood control measures.

NWF does not believe that the primary goal of this project, the reduction of floodwater damages by structural means, is a wise or appropriate allocation of limited Soil Conservation Service funds. Soil erosion is an irretrievable loss of vital natural resources and great emphasis must be placed upon addressing this problem within this agency. Yet, the increasing levels of soil erosion and sedimentation in the country have not been the focus of Soil Conservation Service Small Watershed Program planning efforts and funds.

We recognize that urban stormwater drainage and flood damage reduction are serious and legitimate concerns in metropolitan Chicago. However, funding to address these problems should not come from the SCS Small Watershed Program. We believe that the SCS should assist with the treatment and protection of highly erodible lands elsewhere in Illinois and in the rest of the country. The problem of flood damage reduction can be more appropriately addressed by the Army Corps of Engineers.

Thank you for the opportunity to present these views.

Senator FOWLER. Thank you.
Mr. Gray.

STATEMENT OF ROBERT J. GRAY, SENIOR ASSOCIATE FOR POLICY DEVELOPMENT, AMERICAN FARMLAND TRUST, WASHINGTON, DC

Mr. GRAY. Thank you very much, Mr. Chairman.

I appreciate the opportunity to testify today. I am Bob Gray, senior associate for policy development with the American Farmland Trust; a private, nonprofit conservation organization with about 40,000 members nationwide.

I would like to use my time this morning, Mr. Chairman, to talk about some of the larger issues and what you mentioned at the beginning of this hearing; that is the priorities of the Soil Conservation Service today, given budget constraints and given the mission that this agency has in reducing soil erosion, particularly on our cropland.

As you know, we have made tremendous gains since the passage of the 1985 farm bill in starting to reduce soil erosion. You were on the House side at that time, supporting those conservation efforts in the 1985 farm bill, which really made sweeping changes; the Conservation Reserve Program, the Sodbuster, the Swampbuster and compliance provisions that are now just starting to be implemented.

I might add that the Conservation Reserve Program has really got off to a very, very good start. The CRP has placed almost 19 million acres of highly erodible cropland in either grass or trees with a soil erosion reduction of between 500 to 600 million tons of soil. Compare that with the present cost sharing program that has been running for years and years. That has a reduction of somewhere between 70 and 80 million tons of soil each year.

So we are really starting to make a dent in that 3 billion tons of soil erosion on cropland; but I think when you look at that, and you look at the priorities of SCS—and I certainly think that SCS has done a commendable job at this point in implementing the provisions of the 1985 farm bill, Mack Gray and Galen Bridge and the other gentlemen here from SCS are friends; we work closely with them; they have worked very hard with the conservation organizations to keep us informed and to keep us involved as they were implementing these provisions.

But as you look at this watershed program and review it in light of the major priorities of SCS, I think this particular project is sort of indicative of the problems with the watershed program. As I reviewed the plan—and I must admit I have not gone through it in fine detail—but I fail to see, really, any major environmental conservation benefits that you could really tie to this particular project. Sediment control, real erosion savings, also wildlife habitat protection, and it is interesting to note, in fact Ed Osann made this comment earlier, I think it was brought up, I believe, by yourself a short time ago—one of the points made in the plan was the enhancement, to some degree, of growth in the areas where they were attempting to control the floods.

I think that sort of contradicts the intent of the Farmland Protection Policy Act which was passed in 1981 by Congress as the way of trying to reduce the conversion of good farmland to nonagriculture uses; and here we have a program that really goes against that.

I think that the real question here is whether or not these watershed projects should continue; whether this program should continue. It is an $135 million program in fiscal 1987; it started back in the 1950's; it has built itself up, and I just do not believe, in my opinion, that this is really a priority that SCS should be following anymore.

Last summer, the National Association of Conservation Districts made an assessment of the manpower needs that the Soil Conservation Service was going to require for full implementation of the provisions of the 1985 farm bill. That assessment showed that about 2,900 additional personnel were needed to take care of getting 45 million acres into the Conservation Reserve Program, implementing the provisions of the Sodbuster, Swampbuster and Conservation compliance—as you know by 1990, farmers that are still cropping highly erodible land have to have a conservation plan or be working on that and have it completed by 1995 in order to retain eligibility for farm program benefits.

This is going to take a lot of manpower. These programs pull away funds, they pull away technical assistance, and they pull away manpower.

Senator FOWLER. Do you oppose the SCS doing this kind of business, or just the specific program, the Small Watershed Program?

Mr. GRAY. I think in this program, Mr. Chairman, that it is a ways along; I am not sure that the people that support this, obviously, have shopped around for funding and found that SCS is willing. My opposition is to the watershed program in general; and I think that that program has to really be looked at very, very hard in relationship to the priorities that SCS has. My feeling is, in the long run, it needs to be phased out.

Senator FOWLER. That is what the administration is proposing. They have proposed to phase out small watershed programs in 1988.

Mr. GRAY. Well, I would agree with that. I think it is time; I think this program is really a dinosaur, and it needs to become extinct. I was only going to follow up by saying that I appreciate this subcommittee taking a look at this particular project, because it is a good example, but I think the subcommittee should take a long, hard look at the watershed program, and even if you do not, in final analysis, recommend elimination of this program, there certainly should be more environmental conservation cost benefits built into any of these projects that are funded in the future. I appreciate your giving me the opportunity to testify.

[The prepared statement of Mr. Gray follows:]

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TESTIMONY OF

ROBERT J. GRAY
SENIOR ASSOCIATE FOR POLICY DEVELOPMENT
AMERICAN FARMLAND TRUST

BEFORE THE

SUBCOMMITTEE ON CONSERVATION AND FORESTRY

OF THE

COMMITTEE ON AGRICULTURE
NUTRITION AND FORESTRY

U.S. SENATE

JULY 17, 1987

Mr. Chairman, members of the Subcommittee on Conservation and Forestry, I appreciate the opportunity to testify today. I am Bob Gray, Senior Associate for Policy Development with the American Farmland Trust (AFT). AFT is a private, nonprofit organization dedicated to the conservation of our nation's agricultural land. We have almost 40,000 members nationwide.

Mr. Chairman, as you know, AFT has worked extensively on evaluating USDA soil conservation programs and making recommendations to Congress on new policies and programs to more effectively control erosion on our nation's cropland. In 1985 AFT combined forces with twenty other major conservation organizations to push for substantial changes in federal soil conservation policy. Based upon our analysis of the cost sharing program and other soil erosion programs operating within USDA, it was clear that the federal government was not making even a major dent in the 5.0 billion tons of soil erosion occurring nationally each year. Some radical changes in soil conservation were needed.

As you well know, members of Congress, including yourself, responded to this need by passing the most sweeping changes in soil conservation policy in the last fifty years. The Conservation Reserve Program (CRP), Sodbuster, Swampbuster and Conservation Compliance provisions of the 1985 Farm Bill, combine to make the most comprehensive approach to fighting soil erosion ever crafted legislatively. Already

the CRP has placed almost 19 million acres of highly erodible cropland in either grass or trees with a soil savings of more than 500 million tons annually. This compares with an estimated annual soil savings of about 80 million tons from the ACP cost sharing problem.

We are now starting to make some real headway in the fight to reduce erosion. Farmers who take part in the federal commodity programs run the risk of losing farm program benefits if they plow up highly erodible pasture or rangeland or, if they convert wetlands to cropland. In addition, those farmers who continue to cultivate highly erodible cropland after 1990 will need a conservation plan in place in order to avoid losing farm program benefits. This is the very first time that soil conservation has ever been fully integrated with the USDA commodity programs.

My purpose in reviewing these new programs is to compare their importance with the Soil Conservation Service's (SCS) efforts to deal with flood control problems. This is a relevant comparison since SCS has listed the reduction of upstream flood damages as one of its five conservation objectives in its Final Program Report and Environmental Impact Statement in response to provisions of the Soil and Water Resource Conservation Act of 1977 (RCA) (Public Law 95-192). Reduction of excessive soil erosion was listed in that report as SCS's number one priority.

Since the passing of the 1985 Farm Bill, SCS has done an outstanding job in implementing the CRP and in preparing the final rules for Sodbuster, Swampbuster and Conservation Compliance. Through all of this, they have maintained close contact with the conservation community and have kept us informed continually on the progress in preparing the final rules on the provisions listed above. I believe that overall, the conservation organizations have never had a more solid working relationship with SCS as they do at this time.

However, there is an important area of disagreement with SCS which I would like to comment on this morning. SCS has been operating a small watershed program for a number of years, since the passage of the Watershed Protection and Flood Prevention Act of 1954 (PL 83-566). Funding for this program was 143.8 million in FY86 and 134.8 million in FY87.

Given the budget constraints being faced today it is very questionable whether the continued funding of these watershed projects is advisable. The Lower Des Plaines Watershed Project being discussed here today is a good case in point. The total cost of this project is 56 million dollars. In reviewing the Final Watershed Plan, the conservation advantages of this project are extremely hard to determine. Improvements to wildlife habitat, erosion sediment control and wetlands protection form a very minor portion of this project. It seems very difficult to justify the cost benefit

effects of this project from a conservation point of view. In fact, the report emphasizes the possible increase of economic growth and development in a portion of the watershed which will have its flood hazard reduced. The impact of additional growth will cause more surface runoff and increased sedimentation. In addition, it seems that this project contradicts the intent of the Farmland Protection Policy Act (FPPA) which was designed to slow down the irreversible conversion of agricultural land to non-agricultural uses. SCS administers the FPPA.

The main point I would like to make in my testimony, is that, from a conservation standpoint, the watershed program is not a beneficial use of public funds. Recently SCS has requested additional manpower to implement the conservation provisions of the 1985 Farm Bill. If the number one priority of SCS is to reduce excessive soil erosion, then manpower should be shifted from the watershed projects to those areas where cropland erosion is serious.

SCS needs to redefine its priorities. Watershed projects such as the Lower Des Plaines -- should be phased out of SCS's conservation objectives. They are no longer relevant to long-term resource protection, and in most cases are environmentally detrimental.

I would therefore recommend that Congress:

(1) Review the current SCS watershed program in terms of its priority in comparison with more pressing conservation needs.

(2) Require a much greater environmental benefit analysis for any future projects under this program.

Mr. Chairman, I appreciated the opportunity to testify and will be glad to answer any questions.

Senator FOWLER. Thank you very much, Mr. Gray.

Mr. OSANN. Mr. Chairman, if I might make a point with regard to the P.L. 566 program as a whole, I think our perspective on that is the program is potentially very useful as one element in a broad array of tools that SCS and USDA have to combat soil erosion and sedimentation.

I would qualify our views regarding the future of the program as follows: In its present form, the program probably should be phased out; but with modifications, the program could make a very valuable contribution to combating targeted severe areas of soil erosion.

There are many aspects of the P.L. 566 program that we like. They tend, other than—this project is somewhat anomalous—they tend to be small projects; they tend to rely upon a lot of local initiative and local cooperation, usually without eminent domain, these kinds of projects, and there is a lot there to build on.

We think the problem comes in the priorities and administration of the program; that it is topheavy right now.

Senator FOWLER. Thank you, all three of you.

Mr. GRAY. Mr. Chairman, I would like to leave with you, during the testimony it was brought up that the American Farmland Trust had completed an economic impact of the conservation and reserve, showing that by the time it reaches 45 million acres it will be saving $700 million a year in terms of deficiency payments, storage costs on that land that might otherwise have been in part of the Federal commodity programs.

We have briefed the staff previously; this is a final report. I would like to leave a copy for you and the staff.

[The final report is retained in the subcommittee file.]

Senator FOWLER. We would very much like to see it.

Thank you all very much.

Our last witnesses are from the Soil Conservation Service. Galen Bridge, Deputy Chief for Programs, the Soil Conservation Service of the Department of Agriculture. With him are Mr. Nelson and Mr. Bouchard.

STATEMENT OF GALEN S. BRIDGE, DEPUTY CHIEF FOR PROGRAMS, SOIL CONSERVATION SERVICE, U.S. DEPARTMENT OF AGRICULTURE, ACCOMPANIED BY EDGAR H. NELSON, ASSOCIATE DEPUTY CHIEF OF TECHNOLOGY, AND CARL E. BOUCHARD, COORDINATOR, WATERSHEDS PLANNING PROGRAM

Senator FOWLER. Mr. Bridge, what do you think about all this?

Mr. BRIDGE. I think these are exciting times, and we need to talk about some of these issues.

Senator FOWLER. That sounds like a good bureaucratic response.

Mr. BRIDGE. Yes.

Let me just start off, Mr. Chairman, by saying that we are pleased to be here this morning, and for the record, we will submit a prepared statement that does support the authorization of the Lower Des Plaines tributaries watershed project, and that testimony so indicates.

Senator FOWLER. Good. Thank you.

Mr. BRIDGE. I do have with me, as you noted, Carl Bouchard, who is a watershed planning specialist with the national office and Ed

Nelson, who has some institutional memory if you want to get into the details of the historical record on the Lower Des Plaines project.

I think it would be useful for me this morning to talk a little bit about what the priorities are in the watershed program, and see if we can set the record perhaps a little straighter than what was discussed this morning.

Senator FOWLER. Well, I wish you would; and as you know, the subcommittee's concerns, as we have certainly read the law, in terms of the law to date was a priority for soil erosion, reduction and I guess it is fair to say not to emphasize the benefits of this kind of urban project.

Mr. BRIDGE. Right.

Senator FOWLER. And not that it is preempted or exempted under the law; but I would like to know how you go about making these decisions, and whether or not these concerns are real.

Mr. BRIDGE. I, as we look back over the record or history of the P.L. 566 program, small watershed activity, flood prevention was certainly a very high priority; we started a lot of projects that did deal with flood prevention. Some of those were urban in nature; and perhaps this Chicago project is unique in that respect.

We still feel that in the countryside there are still serious flood problems in rural communities and on agricultural flood plains, and we feel that this particular authority needs to continue to address, to some extent, those kinds of issues. We would certainly agree with you that they need to be focused in the rural, agricultural areas of the country.

Senator FOWLER. Well, I do not know whether that is necessarily so. I want to know whether the law says that that is necessarily so. Because the laws say, that you are administering, that they should be primarily focused in the rural section of the country.

Mr. BRIDGE. Does the law say that?

Senator FOWLER. Does it say that?

Mr. BRIDGE. It does not. That is a policy within the Soil Conservation Service of the Department of Agriculture.

Senator FOWLER. So you are saying that there is nothing in the law, as you interpret it and administer it that would preempt this kind of project?

Mr. BRIDGE. That is right, sir.

Senator FOWLER. In your interpretation.

Mr. BRIDGE. Right.

Over the last 6, 10 years, we have redirected the program, moving more and more into erosion control kinds of activities. Right now we do think about both combination of those floods prevention activities and erosion control.

Let me indicate to you what the record is on what we have decided in terms of planning starts. This is the point at which we make the decision to assist local sponsors and we authorize the planning startup with our local people.

In 1986 we started a total of 47 new projects and 38, or 80 percent roughly of those projects were for erosion control activities. They were the flood protection type. In 1985, 67 percent of those projects were of the watershed protection or the erosion control type; prior to that, they were a little less.

So we have changed the focus of the program, and we are going much more heavily into erosion control activities.

Senator FOWLER. As opposed to what?

Mr. BRIDGE. Flood prevention.

In terms of the Federal commitment that we estimate, associate with those planning starts, roughly 30 percent is for flood prevention, and about 70 percent of that activity is for erosion control. So we could say on balance that over the last 2 to 3 years that 70 percent of the activity in this program is on erosion control.

Senator FOWLER. Do you have a State allocation system?

Mr. BRIDGE. Yes.

Senator FOWLER. A set allocation by State for the distribution of funds under the program, or is it done on a priority basis?

Mr. BRIDGE. It is done on a priority basis. There is no formula that distributes these funds. We keep a record of each of the projects, where they stand in terms of being ready to go into construction; then the money is allocated to the States on that basis.

Senator FOWLER. But not on a State by State system. In other words, this program, if we did the Des Plaines, would that prevent any other projects in Illinois?

Mr. BRIDGE. We look to each of the States to establish the priorities within that State, in terms of which projects ought to move forward, and what timeframe. Then we allocate the limited resources that we have to those States and certainly we do not send all of the money to Illinois based on this particular project. It would have to compete with the rest of the Nation in terms of funding.

Let me also indicate that we have looked at the program in terms of the Food Security Act of 1985 and the conservation provisions related to that, particularly the highly erodible lands. We are telling our people to use this program to the extent you possibly can in implementing those provisions of the Food Security Act of 1985, to provide additional technical assistance, cost sharing, and so on, on those areas that have significant amounts of highly erodible land.

So we are trying to use this program, the Small Watershed Program, to complement the activities and things that have to be carried out under the Food Security Act.

[The prepared statement of Mr. Bridge follows:]

STATEMENT BY GALEN BRIDGE

SOIL CONSERVATION SERVICE

U.S. DEPARTMENT OF AGRICULTURE

BEFORE THE
SUBCOMMITTEE ON CONSERVATION AND FORESTRY OF THE COMMITTEE ON AGRICULTURE, NUTRITION,

AND FORESTRY ON WEDNESDAY, JUNE 17, 1987

Mr. Chairman, I am pleased to appear before your committee today to provide support for the Lower Des Plaines Tributaries watershed project in Illinois that you are considering today. With me today is Mr. Carl E. Bouchard, of our Project Development and Maintenance Division. He will provide a brief technical explanation of this project. Then we will both be available to answer any questions you may have.

Watershed projects are not direct federal undertakings. Rather, they are initiated by local units of government and other sponsoring organizations. They are developed by teams that cooperate with local conservation districts, county governments, and other local entities. Local steering committees are generally formed to give guidance to the planners, help establish planning objectives and priorties, and help select the final plan. The governors of each state review the project applications to assure their consistency with state plans and programs.

Administration policies for water development emphasize local participation and cost sharing and federal participation based on National Economic Development. The Soil Conservation Service's Watershed Program is compatible with these policies, and the Lower Des Plaines Tributaries Watershed project has been granted an exception by the Secretary of Agriculture to select a plan other than the National Economic Development Plan. The recommended plan also includes provisions for the Soil Conservation Service to provide accelerated technical assistance to local units of government for controlling soil erosion and sedimentation and for the sponsoring local organizations to establish a stream preservation program that will maintain current channel capacities.

The project under consideration today has been prepared in accordance with the Watershed Protection and Flood Prevention Act of 1954, Public Law 83-566. Under this Act, we are giving the highest priority to planning and approving projects that emphasize flood prevention, erosion control and water conservation. This project is a multiple-purpose project for the purpose of flood prevention and watershed protection with provisions to provide for recreation waters and basic facilities in one structure site. The amount of financial assistance by beneficiaries varies by the project's purpose. For flood prevention, the federal government pays 100 percent of the construction costs with federal funds appropriated under Public Law 83-566 and the local sponsors provide all the landrights. The local sponsors provide at least 50 percent of the construction and landrights costs for recreation and operate and maintain all completed facilities.

The watershed program is based on a local-state-federal partnership where the direct beneficiaries of the projects agree to bear a substantive share of the burden of the costs of the services they will receive. The local sponsors will bear 37.6 percent of the cost of this project.

For a description of the two projects being considered today, I turn now to Mr. Bouchard.

Lower Des Plaines Tributaries Watershed, Illinois

The Lower Des Plaines Tributaries Watershed covers 243,700 acres in Cook, Lake and DuPage Counties, and is centered near Chicago O'Hare International Airport. The watershed is primarily urban with 68 municipalities being within the watershed ranging in population from 1368 in Deer Park to 66,116 in Arlington Heights. Twelve municipalities exceed 30,000 in population. The drainage system of the watershed is complex with the main stem draining 258 square miles on the north. There are 10 major tributaries to the Des Plaines River of which Salt Creek is the largest. The downstream limit of the watershed is the confluence of Flag Creek and the Des Plaines. It then flows southwest joining with the Chicago Sanitary and Ship Canal and the Kankakee River to form the Illinois River about 15 miles southwest of Joliet. It eventually outlets into the Mississippi.

The area subject to flooding from the 100 year flood consists of 2,497 residential properties, 146 commercial properties, and 57 industrial properties over 21,000 acres. These account for over $10 million in annual damages of which 20 percent is from road and associated damages. Residential damages account for about 41 percent of the damages, commercial damages, for 10 percent and industrial damages, for 30 percent.

The Lower Des Plaines Tributaries Watershed plan consists of one multiple-purpose excavated floodwater retarding structure with recreational development, four excavated floodwater retarding structures, 2.5 miles of diversion, 1.27 miles of channel work and 0.47 miles of dikes. In addition, it consists of an accelerated technical assistance program to provide assistance to the municipalities for erosion and sedimentation control. The local sponsors will also institute at their own cost a stream preservation program to maintain stream channel capacities as evaluated for current conditions through operation and maintenance. 3,195 acre feet of floodwaters will be stored for later release in the excavated floodwater retarding structures. The works of improvement will be installed over a period of 10 years at an estimated cost of $54,229,000 of which $33,845,600 are federal costs.

Total annual benefits will be $5,936,100 of which 98 percent are from flood reduction benefits and 2 percent are from the recreation development. The estimated average annual cost is $3,670,700.

Lower Des Plaines Tributaries Watershed, Illinois

Size and Location - 243,700 acres in Cook, Lake and DuPage Counties

Tributaries to the Des Plaines River which is a tributary of the Illinois River

Sponsors - Kane-DuPage Soil and Water Conservation District; Lake County Soil and Water Conservation District; North Cook Soil and Water Conservation District; Will-South Cook Soil and Water Conservation District; City of Chicago Department of Aviation; City of Des Plaines; City of Prospect Heights; Cook County Forest Preserve District; DuPage County Forest Preserve District; Illinois Department of Transportation, Division of Water Resources; Metropolitan Sanitary District of Greater Chicago; Village of Franklin Park; Village of Rosemont; Village of Wheeling.

Total Watershed Land Use -

	Percent
Agriculture	9.4
Urban	73.6
Miscellaneous	17.0

Purposes - Watershed Protection, Flood Prevention and Recreation

Principal Measures - Land Protection Program consisting of accelerated technical assistance, one multipurpose excavated floodwater retarding structure with recreational development, four excavated floodwater retarding structures, 2.5 miles of diversion, 1.27 miles of channel work and 0.47 miles of dikes.

Annual Benefits -	Dollars	Percent
Flood Damage Reduction	5,986,500	89.1
Intensification	595,900	8.9
Recreation	133,000	2.0
TOTAL	6,715,400	100

Benefit-Cost Ratio - 1.62:1 with 8 7/8 percent discount rate

Area Benefited - 21,000 acres

Number of Beneficiaries - 2497 residential units
203 business, commercial, and public buildings

Project Costs -	P.L. 566 Funds		Other Funds		Total
	Dollars	Pcts.	Dollars[1/]	Pct.	Dollars
Land Protection-Acc Tech. Asst.	1,047,600	89.3	125,700	10.7	1,173,300
Structural Measures					
Flood Prevention	29,008,200	77.7	8,331,100	22.3	37,339,300
Multipurpose					
Flood Prevention Recreation	1,333,100	11.1	10,669,200	88.9	12,002,300
Project Administration	2,456,700	66.2	1,257,400	33.8	3,714,100
TOTAL	33,845,600	62.4	20,383,400	37.6	54,229,000

Prorated P.L. 566 Structural Cost per Acre Benefited - $1,562

Carrying out the Project - The Kane-DuPage, Lake, North Cook and Will-South Cook Soil and Water Conservation Districts will provide assistance in resource conservation planning and application of land protection measures. The Stream Preservation Program will be implemented through agreements between the State of Illinois and local governmental agencies. The DuPage County Forest Preserve District will be the sponsoring and contracting local organization for multipurpose structure 5. The Metropolitan Sanitary District of Greater Chicago (MSDGC) will be the local contracting organization for the flood water retarding structures, diversions and channels. Landrights will be shared by the communities, DWR, FPD's, and MSDGC. The local sponsoring organizations will operate and maintain the measures as specified in this plan.

The estimated annual cost of operation and maintenance is $117,100.

1/ For land protection measures this is primarily the cost of applying land treatment measures by landowners. For structural measures this is the cost of landrights and project administration. It also includes costs for construction or engineering services for purposes other than flood prevention and for the non-project flood prevention costs of the multipurpose structure.

The sponsors do not intend to use an FHA loan.

Senator FOWLER. Under those priorities that you just gave to us, Mr. Bridge, that you developed from 65 percent up to 80 percent of your projects under erosion control, under these priorities as you described them, would this project, if it were in the initial planning stage today, be considered under this program?

Mr. BRIDGE. This would not be consistent with the present priorities of the program.

Senator FOWLER. Are there other projects in the initial planning stages still that are any way in size and scope similar to this one, that we are going to, that the committee and the Congress are going to be asked to authorize in the future?

Mr. BRIDGE. There are some urban-type flood protection projects in the pipeline that were authorized probably around the dates that this one was. None of them would be of the magnitude of this. This one is unique in terms of its cost and so on; not in terms of its size.

Senator FOWLER. You heard us ask earlier about the P.L. 566 regulations requiring consultation with the Corps of Engineers on projects whose objective seems to be primarily urban flood control.

Did such a consultation with the Corps take place on this project?

Mr. BRIDGE. I am going to ask Mr. Nelson to answer that.

Mr. NELSON. Yes, it did.

Senator FOWLER. Why was it decided this project was better suited for the Small Watershed Program, than under the Corps' authority?

Mr. NELSON. The primary reason for the local sponsors seeking the Soil Conservation Service's assistance was the demonstrated success of the type of bottoms-up planning approach in terms of working with the local sponsoring groups, the local entities of government, in helping them prepare a plan that they could reach a consensus on to be implemented.

The Corps of Engineers had had some experience in the Chicago metropolitan area in attempting to develop plans for other watersheds, and had not been successful in identifying alternatives that were acceptable and received local support; so they turned to the Soil Conservation Service to ask us to assist them with the type of planning assistance that we could provide.

Senator FOWLER. Well, do you remember what was it that the Corps was, according to your account, planning to do that the local community found unacceptable?

Mr. NELSON. In this particular project I cannot. I can relate to another project, the Little Calumet project which is adjacent to it. They proposed a very large channel enlarging project to deal with the flooding problem; and we, with our assistance working with the local groups, identified potential ways to incorporate many nonstructural facets to deal with the expanding problem of development.

We also were able to identify potential excavated storage reservoirs for floodwaters.

Senator FOWLER. I understand. In this thing, we are looking for the information on this. Is it your recollection after this consultation that the Corps found some reason that their authority, they did not have the authority to undertake this project, or did the

local community decide that they did not like the Corps' recommendation?

You know what I am looking for. Is there a difference in the cost sharing ratio, for instance, under the Corps programs than under yours?

Mr. NELSON. No. No, there is not. That was not the reason.

Senator FOWLER. What was the reason?

Mr. NELSON. The reason was the success of being able to provide the assistance to identify an alternative plan that could receive local support for implementation. That was the primary reason.

The consultations that took place between us and the Corps, and I was directly involved in meetings with the Chicago District, myself, were such that the project was—within either of our authorities; and they opted, since we had the support of the local sponsors, to agree that we should go ahead.

Senator FOWLER. Well, I am not trying to belabor, much less quarrel, but tell me as specifically as you can why it was thought that this project was better suited for the Small Watershed Program than the Corps of Engineers? Both by you and by the local sponsors, if that is relevant.

Mr. NELSON. Well, I would not say that we felt that way; that we felt it was more suitable for us. We were asked to provide the assistance. And as a matter of fact, if I can go back just a bit, our initial assistance in this area was a part of a river basin study, under section 6 of the same act.

So we initially started out only to provide technical assistance to these entities, to help them put together a plan that they might implement with whatever means that they might find available; and at the time that I was actively involved at the local level, we clearly stated to these people that we were not promising any future financial assistance in the implementation of any project that might be formulated.

The decision to provide assistance as a watershed project came at a later date, after I left the State. It was the local sponsors' desire to pursue the implementation through the Soil Conservation Service that led to this decision, and obviously some shifting in SCS priorities in the intervening time, from the time I worked on the project until now, led us to accept a few exceptions in terms of urban-type flood projects.

Senator FOWLER. In the interests of time, and also because I have got a slight emergency I have to deal with at 11:30, I would like to submit some additional questions for the record, Mr. Bridge, and ask you to provide written answers for.

PATRICK J. LEAHY, VERMONT, CHAIRMAN
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United States Senate
COMMITTEE ON
AGRICULTURE, NUTRITION, AND FORESTRY
WASHINGTON, DC 20510-6000

June 18, 1987

Major General Henry Hatch
Director of Civil Works
U.S. Army Corps of Engineers
20 Massachusetts Ave., NW
Washington, D.C. 20314

Dear Major General Hatch:

On June 17, 1987, the Subcommittee on Conservation and Forestry of the Senate Committee on Agriculture heard testimony on the authorization of the Lower Des Plaines Tributaries Watershed plan under P.L. 83-566. As you know, Committee approval of the plan is required under the Watershed Protection and Flood Prevention Act of 1954.

In yesterday's hearing, a number of questions were raised regarding the Corps of Engineers' involvement in the planning of the Lower Des Plaines Tributaries Watershed plan, and the Corps of Engineers' general jurisdiction over federal flood prevention activities. In order to assist this Subcommittee in its consideration of the Lower Des Plaines plan and general oversight of P.L. 83-566, I would appreciate it if you would submit, for the hearing record, answers to the attached questions. While I understand that some of these questions may involve a review of Corps policy, I hope that you can provide us with the answers to these questions in as timely a manner as possible.

I appreciate your assistance in this matter. If you have any questions regarding our inquiries, please contact Ms. Cris Coffin of the Agriculture Committee staff, at 224-5207.

With regards,

Wyche Fowler, Jr.
United States Senator

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
WASHINGTON, DC 20310-0103

1 JUL 1987

Honorable Wyche Fowler, Jr.
Chairman, Subcommittee on
Conservation and Forestry
Committee on Agriculture,
Nutrition, and Forestry
United States Senate
Washington, D. C. 20510-6000

Dear Mr. Chairman:

This is in response to your recent letter to Major General Henry J. Hatch, Director of Civil Works, requesting answers to questions relating to the Corps of Engineers Civil Works Program raised during the hearing on the authorization of the Lower Des Plaines Tributaries Watershed plan.

At my request, the Corps of Engineers provided me with responses to your questions, and I am transmitting them to you for the hearing record.

I appreciate the opportunity to provide this information on the Lower Des Plaines project. Should you have any questions concerning these responses, please do not hesitate to contact me.

Sincerely,

Steven Dreh, Acting

John S. Doyle, Jr.
Acting Assistant Secretary of the Army
(Civil Works)

Enclosure

Response to Questions to the Corps of Engineers
Regarding the Lower Des Plaines Tributaries Watershed Plan
and P.L. 83-566

Question 1: Can you tell us if, and to what extent, the Corps was consulted by SCS and/or the local sponsors when the Lower Des Plaines Tributaries project was first contemplated?

Response: The Lower Des Plaines Tributaries project is one of nine watershed flood control studies undertaken by the U.S. Soil Conservation Service (SCS) in cooperation with the State of Illinois and the Metropolitan Sanitary District of Greater Chicago that was initiated in the early 1970's. It is our understanding, based on discussions with the State of Illinois, that the SCS did consult with the Corps of Engineers. However, there is no specific information on this coordination.

Question 2: Was there ever a suggestion, as a result of this initial consultation with the Corps, by any of the local sponsors, or SCS, or the Corps, that this project be pursued as a Corps project rather than as a SCS project?

In retrospect, it would seem a logical suggestion. Can you tell us why it was not pursued as a Corps project?

Response: We do not know of any suggestion that the project be pursued as a Corps project. The SCS completed the Lower Des Plaines Tributaries Watershed Plan and recommended projects that can be implemented under the authority of P.L. 83-566.

Question 3: During the hearing, there was mention made of guidelines issued in 1980 by the Office of Management and Budget which restrict the Corps involvement in small watershed projects. Could you explain precisely how and to what degree the guidelines restrict the Corps involvement in these projects?

If the Lower Des Plaines project was being considered for a planning start today, would these guidelines restrict the Corps involvement in the project?

Response: Engineering Regulation 1165-2-21 provides the policy and guidance for the Corps of Engineers participation in urban flood damage reduction projects. This guidance, which was adopted after consultation with the Office of Management and Budget, restricts the Corps of Engineers to participating in water damage problems downstream from the point where the flood discharge is greater than 800 cubic feet per second for the 10-percent flood. Drainage areas of less than 1.5 square miles are generally assumed to lack adequate discharge to meet this criterion. These guidelines would severely restrict the Corps involvement in the Lower Des Plaines Tributaries project. Most or

all of the water-shed areas of Addison Creek, Crystal Creek, McDonald Creek and Buffalo-Wheeling Creek are upstream of the 800 cfs discharge point. Three of the five reservoirs and all of the channel modification sites included in the SCS Lower Des Plaines Watershed Plain could not be implemented by the Corps of Engineers under the above policy.

Question 4: Can you tell us what other watershed projects, if any, the Corps has been consulted on that are in the planning stage or being considered under P.L. 83-566? Are there any such projects whose primary objective is urban flood control?

Response: There are two additional watershed studies being considered under P.L. 83-566 in the Chicago metropolitan area. These would be urban flood control studies in the East Branch, Du page River Tributaries and along Tinley Creek in the Calumet-Sag Watershed. The Du Page River watershed study could not be undertaken by the Corps because the 10-year, 800 cfs criteria cannot be met. The Tinley Creek study would be a follow-on effort in connection with the previous Calumet-Sag Watershed Plan.

Question 5: Could you please indicate to the Subcommittee what the effect of such a transfer would be in terms of:

- o additional planning requirements, if any;
- o additional costs, if any;
- o delay in project completion date, if any.

Response: The Lower Des Plaines project would require specific authorization. Assuming the authorization would be based on the current SCS report, it is estimated that it would cost $300,000 to review the SCS work, to convert SCS information to the Corps of Engineers data base, and to prepare a planning and engineering report consistent with Corps guidelines for processing through Corps review. In addition, a non-Federal sponsor must be identified and must agree to share project costs. At that time, a local cooperation agreement must be negotiated and executed between the Army and the non-Federal sponsor prior to initiation of construction. Considering the authorization constraints and future budget and programming requirements, it is estimated that there would be a delay of about four years in the project construction starting date. Differences in actual completion date will depend on budget priority differences between the SCS and the Corps of Engineers and Congressional reaction thereto.

Question 6: Can you please describe to the Subcommittee the Corps criteria for involvement in flood control projects. How does that differ from SCS' criteria for involvement in flood control projects?

Response: The Corps of Engineers involvement in urban flood control projects is through either specific authorized studies and subsequent project authorization or through the Continuing Authorities Program as authorized by Section 205 of the 1948 Flood Control Act, as amended. Under the Section 205

authority, a local agency may make a direct request to a District Engineer to undertake a study. The report on the Section 205 study may recommend construction of a project if it is economically and environmentally feasible. Project implementation requires subsequent budgetary approval by the Assistant Secretary of the Army for Civil Works and construction approval by the Chief of Engineers. The Des Plaines project could not be conducted under Section 205 authority because of the funding ceiling under Section 205 ($5,000,000 per project).

Both specifically authorized Corps projects and those conducted under Section 205 authority are limited in urban areas to projects falling under criteria discussed in Question 3. It is our understanding that the SCS P.L. 83-566 program is analogous to our Section 205 program except that the SCS is restricted to watersheds not exceeding 250,000 acres in size. The SCS currently is not restricted to a discharge criterion such as the Corps of Engineers is in urban areas.

Question 7: What is the impact of Section 914 of the Water Resources Development Act of 1986 on the Corps ability to propose flood control projects in such areas as the Lower Des Plaines Tributaries watershed?

Response: Section 914 indicates that the Secretary of the Army may consider and evaluate measures to reduce or eliminate damages from flooding without regard to the criteria outlined above in the response to Question 3. This Section applies to any project, or separable project element, where the Federal share of the cost is less than $3 million. This is discretionary authority. In response to Section 914 the Secretary of the Army has requested that the Corps complete a review of the past 10 years of experience and an analysis of projects denied using the criteria. The policy outlined in the response to Question 3 continues to be the basic Army policy until the study has been completed. The study results will be reviewed to determine whether policy changes are warranted.

JOHN MELCHER MONTANA
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United States Senate

COMMITTEE ON
AGRICULTURE, NUTRITION, AND FORESTRY
WASHINGTON, DC 20510-6000

June 22, 1987

Mr. Galen S. Bridge
Deputy Chief for Programs
Soil Conservation Service
U.S. Department of Agriculture
P.O. Box 2890
Washington, D.C. 20013

Dear Mr. Bridge:

I want to thank you for your testimony last week before the Subcommittee on Conservation and Forestry on the Lower Des Plaines Tributaries Watershed Plan. I appreciate your taking the time to provide the Subcommittee with the Service's perspective on the Lower Des Plaines plan and P.L. 83-566 generally.

As I indicated I would do at the hearing, I am enclosing additional questions for the Soil Conservation Service on both the Lower Des Plaines plan and the administration of P.L. 83-566 to be answered for the record. While I understand that several of the responses may involve a review of SCS policy and considerable staff time to prepare, I hope that you may be able to provide the Subcommittee with answers to these questions within the next two weeks.

Again, thank you for assisting the Subcommittee in its deliberations over the Lower Des Plaines Tributaries Watershed plan. If you have any questions regarding the attached inquiries, please contact Ms. Cris Coffin of the Agriculture Committee staff, at 224-5207. I look forward to working with you again soon.

Sincerely,

Wyche Fowler, Jr.

Wyche Fowler, Jr.
United States Senator

United States Department of Agriculture
Soil Conservation Service
P.O. Box 2890
Washington, D.C.
20013

June 25, 1987

Honorable Wyche Fowler, Jr.
United States Senate
Washington, D.C. 20510

Dear Senator Fowler:

Enclosed are responses to the questions submitted from the Sub-Committee on Conservation and Forestry on the Lower Des Plaines Tributaries Watershed Plan. We have tried to answer each question thoroughly and hope that we have not missed any points.

Thank you for the opportunity to prepare written responses to these questions. If there are any questions regarding the responses, please contact Mr. Carl Bouchard, Watersheds Planning Program Coordinator of the Project Development and Maintenance Division at 382-8770.

Sincerely,

Acting for
GALEN S. BRIDGE
Deputy Chief for Programs

Enclosure

Questions for the Soil Conservation Service (SCS)
Regarding the Lower Des Plaines Tributaries Watershed Plan
and Public Law 83-566

1. QUESTION: Can you please describe to us the criteria by which projects are funded under P.L. 83-566, the Small Watershed Program?

ANSWER: Projects authorized for installation under P.L. 83-566 are funded annually as they are ready from the P.L. 83-566 appropriation for watershed operations on a first in, first funded basis.

QUESTION: Is there sufficient funding to fund every authorized watershed project?

ANSWER: No. The FY 1987 appropriation for watershed project installation was about $100,000,000 short of the funds needed to install projects that are ready for construction.

QUESTION: If not, how are priorities determined?

ANSWER: State SCS offices advise the National SCS office annually of those projects requiring funding for installation. This information is compiled into a national list of projects with their associated cost estimates. When the total of these costs exceed funds available, which has been the case for the past several years, only the projects determined highest priority are funded. General, highest priority is given to those projects that have been waiting the longest. We do, however, consider the National Conservation Program priorities which give higher priority to projects that are for flood prevention, watershed protection and water conservation.

QUESTION: Do SCS state conservationists have any role in determining which projects within the state should have priority for funding.

ANSWER: Yes. The list of projects submitted for funding annually by the state is prioritized by the SCS state conservationist in consultation with the designated state agency responsible for setting priorities within that state. This priority is considered when allocating funds to a state.

2. QUESTION: Under the above criteria, is it likely that the Lower Des Plaines would receive funding in FY 1988 under P.L. 83-566.

ANSWER: The Lower Des Plaines probably will not receive any significant funding in FY 1988 because of a shortage of funding and because it will also a need for a construction start.

QUESTION: If so, can you estimate how much.

ANSWER: A small amount of funds may be allocated to start detail design work for the needed construction plans and specifications. This amount would be less than $100,000.

QUESTION: Can you estimate in what fiscal year the project would be likely to receive any significant funding.

ANSWER: Assuming future P.L. 83-566 appropriation levels are comparable to FY 1987, the first significant funding available for the Lower Des Plaines project would be FY 1989.

QUESTION: Can you tell us, at a $33 million federal cost how many years you would anticipate funding the Lower Des Plaines plan? And at what estimated annual funding level.

ANSWER: The state of Illinois is receiving about $5 million of the national FY 1987 P.L. 83-566 appropriation to install authorized watershed projects. Assuming level funding at the national level and the Lower Des Plaines project receiving first priority on funds allocated to Illinois it would take about 7 years to completely install the project. In the plan, we estimated a 10-year installation schedule which may be optimistic.

3. QUESTION: Do you have any reason to believe that the Lower Des Plaines plan may preempt or prevent funding for any watershed project in Illinois, or in any other state, that may have a higher benefit in terms of watershed protection and/or soil conservation?

ANSWER: No. The approval of the Lower Des Plaines plan will not preempt or prevent funding for any watershed project in Illinois or in any other state that may have a higher benefit in terms of watershed protection and/or soil conservation. Being a flood prevention project makes it a high priority project under the National Conservation Programs but it would not preempt other high priority projects. The only way it would preempt other projects in Illinois would be if the SCS state conservationist and the state of Illinois reordered thier funding priorities. The amount of benefits do not affect the funding priority.

QUESTION: Do you believe that SCS has a responsibility to fund any such project before funding the Lower Des Plaines plan.

ANSWER: Yes, SCS has previous commitments to all sponsors to construct their projects dependent upon funding availability. Some sponsors have been ready to proceed to construction and it would not be appropriate to put a new project ahead of them.

4. QUESTION: Can you tell us whether there are any other watershed projects currently in the planning stage or being considered for a planning start under P.L. 83-566 whose primary objective is urban flood prevention?

ANSWER: Yes. We do have other flod prevention projects that are urban in character.

QUESTION: If so, can you tell us which projects, and at what stage in the planning process are they?

ANSWER: The following five projects are currently being planned:

Upper Penitencia Creek, Santa Clara County, California;

Yantic River, New London County, Connecticut;

South Fork Little River, Christian and Todd Counties, Kentucky;

Snake River, Marshall, Pennington, and Polk Counties, Minnesota; and

Howard Creek, Greenbrier County, West Virginia

It could be argued that the Kentucky and West Virginia projects are rural projects and should not be considered urban. There are also three or four other projects in planning that where planning will likely be terminated because of project infeasibility.

In addition, we have received requests for planning authorizations for the following projects that although the benefits are classified as urban are in rural communities or the runoff comes from agricultural, range, or forestland:

Mint Canyon, Los Angeles County, California;

Tinley Creek, Cook County, Illinois;

Whites Creek, Webster County, Mississippi;

Upper Blanchard, Hancock, Hardin, Seneca and Wyandot Counties, Ohio; and

Dry Creek, Big Horn and Park Counties, Wyoming.

5. QUESTION: Can you please describe to us SCS criteria for involvement in projects under P.L. 83-566 that are substantially urban flood prevention in nature?

ANSWER: The P.L. 83-566 program is a program that is available to all people whether they reside in urban or rural areas. However, we do grant priority when granting planning authorizations to projects that are urban in character that have a federal cost of less than $5 million and the source of the problem is runoff from agricultural lands. Other urban projects exceeding this criteria receive the lowest priority and are not granted planning starts. However, we will try to honor past commitments for projects approved for planning or approved for construction.

QUESTION: Can you tell us how SCS' criteria differs from the Corps of Engineers criteria for involvement in urban flood control projects?

ANSWER: The criteria for involvement in urban flood control projects is the same. However, through joint agreements between the U.S. Army, Corps of Engineers, the U.S. Department of Agriculture, and the Soil Conservation Service dated January 19, 1959 and September 23, 1965, the separation of functions is well described in the following sections from the agreements which describe the primary criteria for SCS involvement in urban flood control projects.

"2. That in the preparation of plans under the authorities of Public Law 566 the primary flood prevention objective of the Soil Conservation Service will be to provide protection for upstream agricultural flood plains and for those upstream urbanized areas where flood problems of minor magnitude exist; but that this will not preclude the inclusion in Public Law 566 plans of upstream engineering works for, (a) the protection of downstream agricultural flood plain lands pursuant to section 4 hereto, or (b) the protection of upstream urbanized areas, pursuant to section 8 hereof, where flood problems of intermediate magniture exist.

4. That within the limitations of Public Law 566 the Soil Conservation Service may provide, in addition to land treatment and minor engineering works, reservoir capacity the primary purpose of which is to protect downstream flood plains if the following conditions are met:

a. That such capacity is provided by ungated storage of not more than 12,500 acre-feet for flood protection in any single reservoir.

b. That protection by this means would be more economic than protection by reservoirs providing more than 12,500 acre-feet of capacity for flood prevention in any single reservoir.

c. That the proposal is consistent with any existing or contemplated comprehensive river basin or regional plan.

d. That the Corps of Engineers has been given an opportunity to review the proposal and its views have been considered.

8. That when either the Soil Conservation Service or the Corps of Engineers contemplates the provision of flood protection for any upstream urbanized area at which the flood problem is of "intermediate magnitude" it will inform the other party to this agreement, and that the two parties will consult with a view to reaching agreement as to which of them should provide such protection. Such consultations shall be guided by the following:

a. In general, the Corps of Engineers will assume responsibility where, (1) a very high degree of protection is needed (i.e., where a great flood would result in such catastrophic damages and possible loss of life that protection against a flood larger than a 100-year flood appears to be justified), or (2) where protection (regardless of the degree of protection contemplated) can most economically be provided by local protection works.

b. In general, the Soil Conservation Service will assume responsiblity where, (1) protection against a flood of 100-year magniture or less is found to be adequate, or (2) protection may most economically be provided principally by upstream reservoirs none of which provide more than 12,500 acre-feet of flood protection capacity, or (3) protection of upstream agricultural lands may be advantageously combined with protection of the urban area.

c. Consideration shall also be given to the readiness of the two agencies to proceed promptly and to the desires of the interests to be benefited."

6. As was discussed briefly at the hearing, the Subcommittee is concerned about the Lower Des Plaines plan's attributing as a benefit development of "underdeveloped" portions of a floodplains.

QUESTION: Are you aware that Executive Order 11988 requires you to avoid development of flood plains except as an absolute last resort?

ANSWER: Yes, we are aware of the provisions of E.O. 11988.

QUESTION: Does the development of "underdeveloped" flood plain land not conflict with the Executive Order 11988?

ANSWER: No. The flood plains in this project are essentially fully developed. Benefits in the flood plain are of two types: Intensification and flood proof cost reductions. Intensification benefits account for the difference in land value before and after project installation and changed land use from industrial to residential uses while flood proof cost reductions were obtained from savings in flood proofing costs. These savings will occur in areas already zoned for development where costs will be reduced by not having to flood proof buildings above the 100-year flood. These will not be allowed to encroach upon the floodway.

QUESTION: The Final Plan/EIS for the project states that recreational opportunities are presently limited in parts of the Lower Des Plaines Tributaries watershed. Would recreational areas and facilities not be more suitable in certain of these flood plain areas than intensified development?

ANSWER: Determination of flood plain use is a responsibility of the local unit of government. Recreation uses are always a recommended use in flood plains but final determination lies with local zoning authorities. In this case the local units of government have determined this will be industrial or residential development rather than recreation.

7. QUESTION: What is the balance in the Small Watershed Program of the Soil Conservation Service between planning projects that are rural in emphasis and those dedicated in part to reducing the estimated 6.5 billion ton soil erosion rate that this country faces each year?

ANSWER: Emphasis on projects devoted to reducing erosion and sediment damages began in 1977 with the granting of a planning authorization to prepare such a plan. Since 1977, 272 planning starts have been granted representing a planned future federal commitment of $518 million. Of these, 144 (52.9%) were to prepare plans primarily aimed at reducing erosion and sediment damages and improving water quality. Since 1977, these represent $162 million or 31.9 percent planned for future funding the percent of federal dollars for assistance has increased over these years to about 60 percent of the total value represented by the planning starts. For instance, out of 24 requests under consideration for

planning authorizations, 16 projects are for sediment and erosion control purposes. This represents about 66 percent of the federal commitment going to projects primarily for controlling erosion and sedimentation. These projects average about $1.8 million each for both land treatment and for other water resource plans, primarily flood prevention projects. Planning authorizations from 1977 to 1986 for erosion control plans represented an average federal value each of about $1.2 million while the water resource plans averaged about $2.8 million each. These projects are primarily rural in nature where the runoff producing the floods comes from agricultural cropland or rangeland and floods agricultural land or residential and business areas.

Senator FOWLER. Is there anything else?

Mr. NELSON. If I might take just one quick minute to respond to an issue which was raised about the need for nonstructural type solutions.

One of the things that I am most proud of in terms of my assistance in that area is the development of the materials that the local entities of government used to develop and issue flood plain land use regulations, and the support that we provided to MSD in terms of their compensatory storage ordinance, an ordinance which requires that if any development does take place on the flood plain, an equal volume of storage must be excavated someplace else so that the encroachment does not take place, and the on-site flood detention requirements, which even outside the flood plain areas if development takes place, they are required to provide storage to offset the additional flood discharges.

I might also add that the additional acquisition of flood plain land by the local forest preserve districts, especially in Lake County, was an outgrowth of the initial plan in that they recognized that one of the very best things they could do in the undeveloped area was to acquire it and use it for open space and parks, rather than permit it to develop.

So just about every possible nonstructural means has been explored fully, and a lot of effort has gone forward in implementation.

Senator FOWLER. Gentleman, thank you very much.

I thank all the witnesses today for your concise and thorough testimony. We stand adjourned.

[Whereupon, at 11:25 a.m., the subcommittee was adjourned, subject to call of the Chair.]

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